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} No. 98.

ELEVENTH ANNUAL REPORT

ON

INTRODUCTION OF DOMESTIC REINDEER INTO ALASKA,

WITH

MAPS AND ILLUSTRATIONS,

BY

SHELDON JACKSON, LL. D.,
GENERAL AGENT OF EDUCATION IN ALASKA.

1901.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1902.

IN THE SENATE OF THE UNITED STATES,

January 7, 1902.

Resolved, That the Secretary of the Interior be directed to transmit to the Senate the report of Dr. Sheldon Jackson upon "The introduction of domestic reindeer into the district of Alaska," for 1901.

Attest:

CHARLES G. BENNETT, *Secretary.*

[Indorsement.]

DEPARTMENT OF THE INTERIOR,

January 8, 1902.

Respectfully referred to the Commissioner of Education for early compliance, through Department, with return of this paper.

E. A. HITCHCOCK, *Secretary.*

LETTERS OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,

Washington, January 10, 1902.

SIR: I am in receipt of Senate resolution of the 7th instant that the Secretary of the Interior be directed to transmit to the Senate the report of Dr. Sheldon Jackson upon "The introduction of domestic reindeer into the district of Alaska" for 1901.

In response thereto, I have the honor to transmit herewith a copy of the report indicated in the foregoing resolution, together with its accompanying map and illustrations.

Very respectfully,

E. A. HITCHCOCK, *Secretary.*

THE PRESIDENT PRO TEMPORE OF THE UNITED STATES SENATE.

JANUARY 9, 1902.

SIR: I have the honor to acknowledge, by reference from you, a copy of a resolution adopted by the Senate of the United States on January 7, 1902, "directing the Secretary of the Interior to transmit to the Senate the report of Dr. Sheldon Jackson upon the introduction of domestic reindeer into the district of Alaska for 1901."

In compliance with said resolution I have the honor to forward herewith the report of the United States general agent for education in Alaska on the subject and covering the period named.

Very respectfully, your obedient servant,

W. T. HARRIS, *Commissioner.*

THE SECRETARY OF THE INTERIOR.



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TABLE OF CONTENTS.

	Page.
Action of United States Senate	2
Letter of transmittal Commissioner of Education to Secretary of the Interior..	3
Annual report of Dr. Sheldon Jackson	9
Eaton Reindeer Station	9
Moravian Mission reindeer herd	10
Protestant Episcopal Mission reindeer herd	11
Roman Catholic Mission herd	11
Swedish Evangelical Union Mission herd	12
Presbyterian Mission reindeer herd	12
Synrock reindeer herd	12
Norwegian Evangelical Lutheran Mission herd	13
Congregational Mission herd	14
Friends' Mission reindeer herd	14
Presbyterian Mission reindeer herd	14
Point Hope reindeer herd	14
Winter tour of inspection	14
Table of herds loaned by the Government	15
Proposed new herds	16
Tabulated statement of reindeer in Alaska	16
Increase from 1892 to 1901	17
Expenditure of reindeer fund, 1900-1901	17
Efficiency of native herders	18
Trip of Lieut. E. P. Bertholf, Revenue-Cutter Service, to Siberia	20
Herds becoming a source of profit	22
Reindeer transportation	23
Reindeer relieve United States soldiers	23
Brands	25
Reindeer preserves	25
Cooperation of Treasury, State, and War Departments	25
Itinerary	26

APPENDIX.

Educative work at missions	37
Annual report Eaton Reindeer Station	39
Daily journal of Eaton Reindeer Station	50
Annual report Moravian Mission Reindeer Station	84
Roman Catholic Mission Reindeer Station	86
Annual report Presbyterian Mission Reindeer Station, Gambell, St. Lawrence Island	88
Daily journal on St. Lawrence Island	97
Annual report Norwegian Evangelical Lutheran Mission herd, Teller, Alaska.	123
Annual report of Congregational Mission reindeer herd	127

	Page.
Annual report Presbyterian Mission herd, Point Barrow	128
Report of Lieut. E. P. Bertholf, Revenue-Cutter Service, expedition to Siberia.	130
Official papers relating to Lieut. E. P. Bertholf's expedition to Siberia.....	175
Reindeer in Siberia, by Dr. N. W. Schlunin.....	168
Official papers relating to the relief of United States soldiers.....	206
Permission to purchase military supplies at St. Michael.....	210
Reindeer brands adopted in Arctic Alaska	211
General agent of education directed to visit the schools and reindeer stations in Alaska	212
Papers relating to the transportation of the general agent of education in Alaska	212

ILLUSTRATIONS.

	Number.
Antisarlook, Mary, Synrock, Alaska.....	1
Baptist Orphanage, Wood Island, Alaska.....	2
Cape Prince of Wales, Alaska, Eskimo village.....	3
Freighting with reindeer.....	4
Freighting with reindeer.....	5
Headquarter's house, Teller Reindeer Station (winter).....	6
Headquarter's house, Teller Reindeer Station (summer).....	7
Laplanders milking reindeer, at Port Clarence, Alaska.....	8
Owlhaya, St. Lawrence Island, Alaska.....	9
Point Barrow beach, landing from cutter <i>Bear</i>	10
Public school, Unga, Alaska.....	11
Reindeer herd grazing.....	12
Revenue cutter <i>Thetis</i>	13
Shoo-lik, St. Lawrence Island, Alaska.....	14
Schoechert, Rev. J. H., wife and children, Carmel.....	15
Thlinget cadets, Sitka training school.....	16
Totems, Kasaan, Alaska.....	17
Traveling down hill with reindeer.....	18
Unloading reindeer, St. Lawrence Island, Alaska.....	19
Lapp mothers with their babes.....	20
Friends mission school, Douglas, Alaska.....	21

SIBERIA.

Pavoska, or Russian traveling sled.....	22
On the Lena River.....	23
Reindeer post-station.....	24
Camp on the road.....	25
Traveling through deep snow.....	26
Mounted Tunguses.....	27
Tunguse family shifting camp.....	28
Tunguse sled deer.....	29
Tunguses traveling mounted.....	30
Traveling with reindeer and sled in Siberia.....	31
Governor's house and buildings, Okhotsk.....	32
Siberian traveling dog sled.....	33
Between Okhotsk and Ola.....	34
Native with trained sled deer, herd in the distance.....	35
Corral for catching and hobbling the deer.....	36
Deer hobbled ready for loading in the boats.....	37
Loading deer into the boats.....	38
Manner of carrying children when traveling in summer.....	39
Two Tunguse deer-men who own some 6,000 deer.....	40
Mounted Tunguses—summer time.....	41
Lieutenant Bertholf mounted on deer, showing the ability of the reindeer to carry 210 pounds.....	42
General chart of Alaska and eastern Siberia.....	43
The village of Ola, and approaches, Siberia.....	44

ELEVENTH ANNUAL REPORT

ON THE

INTRODUCTION OF DOMESTIC REINDEER INTO ALASKA.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
Washington, D. C., December 30, 1901.

SIR: I have the honor to submit to you the Eleventh Annual Report on the Introduction of Domestic Reindeer into Alaska.

The year has been one of progress. Among the more noteworthy events were the securing of a number of reindeer from the region back of Ola, Siberia, to cross with the existing herds, the larger employment of reindeer for transportation, and the more favorable treatment of the reindeer enterprise by the newspaper press.

From the commencement of purchasing reindeer in 1891, when 16 were bought as an experiment, up to the present time 1,320 reindeer have been procured in Siberia and delivered in Alaska. From these, 4,462 fawns have been born. In 1898, 265 reindeer were killed by the Government, mainly for food for the ice-bound whalers at Point Barrow, and 1,353 have been killed for food for the herders and their families or died from disease or accident during the past ten years, leaving 4,164 in the herds at the present time.

Eaton Reindeer Station.—Personnel: Francis H. Gambell, M. D., superintendent; Frederick Willard and J. T. Lindseth, assistants. The Lapp herders were Ole Bahr, Nils Klemetsen, and Per Mathisen Spein. The Eskimo herders were Okitkon, Tatpan, and Nellagoroak.

The station buildings are in good condition. The school was taught by Mr. Frederick Willard, who reports that school began October 23, 1900, and closed April 26, 1901. Of the 10 pupils, 7 were Eskimo, 2 were Lapps, and 1 American. Their ages ranged from 6 to 21 years. The most advanced pupil reads well in the Third Reader and has studied arithmetic as far as fractions. Some of the children manifest their desire for education by not infrequently coming to school without waiting for breakfast.

The latter part of September men were sent to Nucleet to bring in

the herds of the station for the winter. Encountering a severe storm, on their return from the herd the boat was capsized at the mouth of Egavik River and the personal effects, clothing, and Government stores were lost.

There being large forests of birch at this station, and not at the other reindeer stations, 100 sets of harness trees and a large amount of sled timber were cut out during the winter at the Eaton station, which last summer was distributed by the revenue cutter *Bear* to the several stations.

Two Eskimo herders, Okitkon and Tatpan, at Golovin, not doing very well, it was thought best to remove them and their herds to the neighborhood of Eaton station in order to place them under the supervision of Dr. Gambell.

All the fuel for summer and winter used at the station, with its dozen dwelling houses, was drawn by "green" deer. In this way between 30 and 35 young deer were broken to harness and made ready for the trail the following year.

During the winter an epidemic attacked the dogs, so that hundreds died along the shores of Bering Sea. Over 200 dogs were hauled away from the small village of Unalaklik after the snow disappeared. The same epidemic affected to a small extent the Lapp dogs used in herding the deer.

With furnishing relief for two detachments of United States infantry snow-bound to the eastward of the station, the furnishing of reindeer transportation for building of the military telegraph line between Unalaklik and Kaltag, the separation from the Government herd of the reindeer loaned to the Roman Catholics and of those loaned to the Moravians, together with a tour of inspection of Kotzebue Sound and the reindeer herds on Seward Peninsula by the superintendent, the year was a very busy one.

Moravian Mission reindeer herd, Bethel, Kuskokwim River.—J. H. Romig, M. D., local superintendent; Lapp herders, Nils P. Bals and his son Persen N. Bals.

The Moravian herd left Eaton Station in charge of Mr. J. T. Lindseth about the 26th of February, arriving at St. Michael March 1, where the herd was turned over to Henry Noreen, representing the Moravian Mission. The herd made the trip in good condition, crossing the Yukon River in the neighborhood of Andreafski, and arriving at Bethel on the 27th of March. Abundance of moss pasturage was found during the whole distance of over 300 miles. The herd was attended on the entire trip by Nils Klemetsen, an experienced Laplander, who, upon the completion of the trip, returned to the headquarters station at Eaton. The herd made from 20 to 30 miles a day.

On March 29 the herd, numbering 88 males and 88 females, was

driven through and beyond the mission to the pasturage grounds that had been chosen in the region of Mount Hamilton. The coming of this herd had been long anticipated by the missionaries. With the fast disappearance of the game food and fur-bearing animals the native population was beginning to face starvation, and it is hoped that the increase of this herd will create a new industry and a new means of support to those needy Eskimo.

After the long trip from Eaton reindeer station to Bethel in March it is of interest to note that the 88 does composing the herd each gave birth to a fawn during April, May, or June, and all the fawns lived but two.

Protestant Episcopal Mission reindeer herd.—Rev. J. L. Prevost in charge. This herd is still on the seacoast, 49 head being in the herd of the Swedish Mission at Golovin Bay and 60 in the Government herd at Eaton Station.

Roman Catholic Mission herd.—Rev. J. M. Treca, S. J., superintendent; Lapp herder, Isak A. Bango. After several years of conference and correspondence with the Roman Catholics, during the past winter arrangements were finally consummated by which they would take charge of the deer which the Government had promised to loan them. When it came time, however, to drive the herd to the Catholic mission at Nulato a blizzard was raging which delayed the trip. After the blizzard came a thaw, then another blizzard, making an ice cap several inches in thickness on the snow.

Hearing of the unusual depth of snow upon the portage between Eaton and the Yukon River on the 11th of November Dr. Gambell made a reconnoissance with reference to the feasibility of driving the herd set apart for the Roman Catholics over that route. There were from 30 to 40 inches of snow on the level, upon which it had rained and frozen, causing a crust several inches thick of frozen snow, which made it impossible for the deer to secure food.

In loose snow not over 4 feet deep the reindeer will paw down to the ground and pasture on the moss, but when a rain or thaw occurs, followed by a freeze creating a coating of heavy ice or thick layer of frozen snow, it becomes impossible for the deer to break through the crust and dig down to the moss. On account of this condition of the snow, after a conference with Father Treca, the Roman Catholic priest in charge, it was decided to leave the herd for another season in the neighborhood of the reindeer station. The herd, which had been separated from the Government deer, and marked with the brand chosen for the Catholic herd, was then, at the request of the Rev. J. M. Treca, S. J., missionary at Nulato, placed in charge of Isak Bango, an experienced Lapp, and sent to a pasturage by themselves not very far distant from the headquarters station. It is very much to be hoped that the herd this present winter (1901-1902) will reach its destination in safety.

Swedish Evangelical Union Mission herd, Golovin Bay, Alaska.—Rev. J. Hendrickson in charge. Eskimo herders; Constantine and Toktok. They report the total number of reindeer belonging to the mission at 221; the number belonging to the herders, Constantine 17, and Toktok 17. There is also in the herd at this station of 49 deer belonging to the Episcopal Mission. From the 68 does 65 fawns were born, all of which lived but two.

Presbyterian Mission reindeer herd, Gambell, St. Lawrence Island.—Personnel: Superintendent, P. J. H. Lerrigo, M. D.; assistant, Ole Krogh; herder, Nils Sara; Eskimo apprentices, Ahtakyak, Betwinkhuk, and Sepilla. The attendance at school for the year was 60. Some of the older pupils have advanced as far as fractions in arithmetic; the majority of those in attendance the previous year advanced one grade and steady improvement has been made by all in reading and writing, and especially in the use of the English language. Having picked up a large part of their English from the whalers, it was formerly a heterogeneous compound of pigeon English intermingled with Hawaiian words, such as “pau,” “wahinny,” etc., and of French “savez,” and other foreign words. The teacher made a specialty of grounding them in grammatical and idiomatic English. The school was taught by the superintendent.

During last season the schoolroom was enlarged by the addition of 20 feet to the front of the building and the coal shed doubled in size by building a lean-to on the north side. The station buildings being on the ridge midway across the peninsula and a mile from the beach, where supplies are landed from ships, it was thought advisable to erect a small warehouse near the north beach for the temporary storage of the annual supplies, which was done. The health of the community was good with the exception of five cases of smallpox, of which number one case proved fatal. The superintendent had an attack of varioloid. The community had all been vaccinated, but the vaccine matter was seven months old and did not take well.

July 27, 1900, 29 reindeer were brought from Siberia by the cutter *Bear* and located about 15 miles east of the station. On September 9 the *Bear* landed 41 more deer from Port Clarence, together with Nils P. Sara, herder, and his family. A herder's house 20 miles east of the station was finished October 12. On the 26th of April, 1901, the first fawns were born. The fawning season continued through May and June, 33 being born in all. Four were born dead and 3 died subsequently. The total number of deer that died during the year was 9.

Synrock reindeer herd—Mrs. Charlie Antisarlook (a native woman) in charge. The herd numbers 360, of which Mary, widow of Charlie, owns 272; her sister-in-law, widow of Achiekchick, owns 45; Sagoonuk (son of Achiekchick, aged 16 years,) owns 10; Kotak (Charlie's brother, aged 21,) owns 12; Angalook (Charlie's brother, aged 16,)

owns 9; Asecbuk, aged 18, owns 6, and Kokenyok owns 6. There is one sled deer in the herd belonging to the Government. From 198 does in the herd 148 fawns were born.

White men passing through the country from one mining region to the other have killed some of the deer from this herd. The unlawful interference with the herds has been so great during the past season that the family expect to remove their herd to the neighborhood of Unalaklik, on the eastern shore of Norton Sound.

Norwegian Evangelical Lutheran Mission herd, Teller Reindeer Station, Alaska.—Local superintendent, Rev. T. L. Brevig; Lapp herders, Johan I. Tornensis and Per L. Anti; Eskimo herders, Sekeoglook, Tautook, Dunnak, and Ablikak; apprentices, Coxrook, Kozetuk, Serawlook, Erlingnuk, Ahmukdoolik, Nunahzarlook, and Bahsuk.

The Rev. T. L. Brevig upon his return from the States, June 30, 1900, found that the station had not flourished during his absence of two years. An epidemic of influenza had broken out among the small Eskimo villages in the neighborhood of the station, from which ultimately half of the population died. When the epidemic was at its height the Eskimo in the neighborhood, in their fear, fled to the station and pitched their tents around the mission, where 20 of them died and were buried by Mr. Brevig. For six weeks, before any Government aid was sent in, of which mention is made later in the report, 45 natives were fed and their sick cared for at the station, and later on 12 orphans, 2 widows each with a child, and 3 young men were taken into the station and cared for during the winter by the Norwegian Lutheran Mission and from "supplies for destitute natives" left by the revenue cutter *Bear*. There are at the close of this report 43 persons in the care of the mission. Information received December, 1901, from Labrador by the way of London, gives an account of the ravages of influenza among the Eskimo on the northeastern coast of America at the same time that it was raging around the coasts of Bering Sea, both in Asia and America.

During the fall the herd was kept on the north side of Grantly Harbor until New Years, after which it was driven and kept on the Agiapuk Creek until June. During the summer it was driven and kept 7 miles to the northwest of the station.

The destruction of pasturage by burning the moss in the neighborhood of the mining camps around Teller Reindeer Station necessitates the removal of the herds from that neighborhood. If present arrangements are carried out the herds will be driven from Port Clarence to the country east of Norton Sound.

The school at this station has been taught during the year by the superintendent, having under his care 17 orphans whose parents died in the epidemic of last year. The attendance was regular and the children made good progress in their studies. The station being on the

direct route between Nome and the mines at York, Shismariell Inlet, and Good Hope Bay, there were many calls from passing miners. In addition to all his other duties, Mr. Brevig was in charge of the distribution of the relief supplies furnished by the Government and left by the revenue cutter *Bear* for the natives in the neighborhood of Port Clarence. During the year the log schoolhouse, which had not been used for several years (school being taught at headquarters), was removed to the new mining town of Teller for the use of the public school started at that place this fall.

Congregational Mission herd, Cape Prince of Wales, Bering Straits.—Mr. W. T. Lopp in charge. There are several Eskimo young men who are part owners in the mission herd, but no report has been received of their names or the names of the apprentices. During the year the Eskimo herders secured from the miners contracts for freighting with the reindeer amounting to \$600. In the spring 276 fawns were born to the herds, 48 of which died from desertion, freezing, and stillborn; 75 deer were killed for clothing and meat, and 33 died from disease and accident, leaving a present total of 993 head.

The school was taught by Mr. C. B. Kittredge, with a total enrollment of 107 and an average of 42 pupils.

Friends Mission reindeer herd, Cape Blossom, Kotzebue Sound, Arctic Ocean.—Robert Samms in charge; Lapp herder, Alfred Nilima. During the year 100 head of reindeer have been loaned this mission, and during the present winter will be driven to their destination, a distance of 300 miles.

Presbyterian Mission reindeer herd, Point Barrow, Arctic Ocean.—Rev. S. R. Spriggs, superintendent; Eskimo herder, Ojello; apprentices, Tokpuk, Panneoneo, Tankawana, Otpelle, Panyooma, and Ungawishuk. Total number of deer, 227, of which Government owns 100, mission 85, and Ojello 42. The herd is located 25 miles from the station. The school was taught during the season by the superintendent.

Point Hope reindeer herd.—No report has been received from this station.

As it has not been found expedient and practicable to secure the supervision of a white man over the Eskimo herd in the neighborhood of Point Hope, instructions have been given to move that small herd northward to Point Barrow, where it will be placed under the general oversight of Dr. Marsh, the local superintendent at that station.

WINTER TOUR OF INSPECTION.

On the 27th of February Dr. Gambell left Eaton Reindeer Station for a tour of inspection. Journeying northward to the head of Norton Bay he ascended the Koyuk River 25 miles, then passing over the divide between Bering Sea and the Arctic he traveled down the right

fork of the Buckland River to its mouth; then crossing Elephant Point he passed over Escholtz Bay (an arm of the Arctic Ocean) on the ice to the peninsula, 40 miles distant from the mission station of the Friends. Along much of the route he found great destitution of food and clothing among the Eskimo, and a very earnest desire on their part that domestic reindeer should be brought to their part of the country.

Leaving the Friends Mission on the 12th of March and crossing an arm of the Arctic Ocean on the ice 60 miles to Cape Espenberg, he followed down the sub-Arctic coast southward to Cape Prince of Wales. The herd in connection with that station was found suffering for the want of a sufficient supply of moss on account of the hard crusted condition of the snow.

After inspecting the herd at Cape Prince of Wales he journeyed to Port Clarence, visiting the Synrock herd, which was in the mountains 25 miles distant. Passing eastward along the Bering seacoast of the Seward Peninsula, the herd connected with the Swedish Evangelical Mission at Golovin Bay was inspected, reaching Eaton Station on the 19th of April, having made a sledge trip of 1,000 miles.

Now that the herds have been sufficiently long in the country to be able intelligently to form a system of dealing with them, it is important that this annual inspection should be kept up, as it affords an opportunity for ascertaining not only the condition of the several herds, but also for comparing one with another; enables the local superintendent to ask and answer questions concerning methods; enables the Eskimo herders to secure more and more information with regard to their calling, and excites an emulation among them to have their herds in the best possible condition.

TABLE OF HERDS LOANED BY THE GOVERNMENT.

A number of reindeer have been loaned by the Government to missionary societies and natives, the Government reserving the right after a term of three to five years of calling upon the mission station or individual for the same number of deer as composed the original herd loaned.

Herds at mission stations in Alaska.

	Number loaned.	In herd, 1901.	When loaned.	When due.
Congregational Mission, Cape Prince of Wales.....	118	993	Aug., 1894	.....
Swedish Evangelical Mission, Golovin Bay.....	50	201	Jan. 16, 1896	.....
Protestant Episcopal Mission, Golovin Bay.....	50	109	.....do.....	.....
Presbyterian, Point Barrow.....	100	185	Sept., 1898	Sept., 1903
Presbyterian, St. Lawrence Island.....	70	87	July 30, 1900	July, 1905
Norwegian Evangelical Lutheran, Teller.....	100	160	Sept. 1, 1900	Sept., 1905
Roman Catholic, Nulato.....	100	136	Mar., 1901	Mar., 1906
Moravian, Bethel.....	88	128	Feb. 26, 1901	Feb., 1906
Moravian, Carmel.....	88	128	.....do.....	.....do.....
Friends Mission, Kotzebue.....	100	100	Sept. 2, 1901	Sept., 1906

Proposed new herds.

Point Hope, Episcopal Mission.....	200
Anvik, Episcopal Mission.....	200
Koscrffsky, Roman Catholic.....	200
Ikogmute, Russo-Greek.....	200
Total.....	800

Tabulated statement of reindeer in Alaska July 1, 1901.

OWNERSHIP AT EATON.

Owners.	Adults.	Fawns.	Total.
Okitkon.....	36	15	51
Tatpan.....	35	18	53
Neilagoroak.....	6	5	11
Government.....	174	78	252
Stephan.....	14	10	24
Episcopal.....	34	26	60
Moses.....	74	21	95
Nulato.....	100	36	136
Lindseth.....	10		10
Walker.....	1		1
Golovin Bay.....	3		3
Total.....			696

OWNERSHIP AT TELLER.

Government.....	139	42	181
Tautook.....	93	48	141
Dunnak.....	42	24	66
Ablikak.....	74	41	115
Mission.....	94	66	160
Sekeoglook.....	41	33	74
Total.....			737

OWNERSHIP AT GOLOVIN.

Mission.....	156	65	221
Constantin.....	11	6	17
Toktok.....	10	7	17
Government.....	2		2
Dexter's wife.....	3	2	5
Episcopal Mission.....	49		49
Total.....			311

OWNERSHIP AT SYNROCK.

Charlie's widow.....	270	100	370
Achickchick's widow.....	45	20	65
Kotoak.....	12	8	20
Sagoonuk.....	10	5	15
Angalook.....	9	5	14
Ascebuk.....	6	5	11
Kokengok.....	6	5	11
Government.....	1		1
Total.....			507

OWNERSHIP AT CAPE PRINCE OF WALES.

Mission.....	765	228	993
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OWNERSHIP AT POINT HOPE.

Electoona.....	55	20	75
Ahlook.....	55	20	75
Total.....			150

Tabulated statement of reindeer in Alaska July 1, 1901—Continued.

OWNERSHIP AT POINT BARROW.

Owners.	Adults.	Fawns.	Total.
Mission.....	140	45	185
Ojello.....			42
Total.....			227

OWNERSHIP AT KOSKOWIM MISSION.

Mission.....	176	80	256
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OWNERSHIP AT ST. LAWRENCE ISLAND.

Mission.....	61	26	87
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Reindeer in Alaska.....	3,964
Received from Siberia.....	200
Total.....	4,164

Increase from 1892 to 1901.

	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
Total from previous year.....		143	323	492	743	1,000	1,132	1,877	2,538	2,854
Fawns surviving.....		79	145	276	357	466	625	638	756	1,110
Purchased during summer.....	171	124	120	123			161	322	29	200
Imported from Lapland.....							144			
Total October 1.....	171	346	588	891	1,100	1,466	2,062	2,837	3,323	4,164
Losses.....	28	23	96	148	100	*334	185	299	469	
Carried forward.....	143	323	492	743	1,000	1,132	1,877	2,538	2,854	

*One hundred and eighty deer killed at Point Barrow for food; 66 lost or killed en route.

Congressional appropriations for the introduction into Alaska of domestic reindeer from Siberia:

1894.....	\$6,000	1900.....	\$25,000
1895.....	7,500	1901.....	25,000
1896.....	7,500	1902.....	25,000
1897.....	12,000		
1898.....	12,500	Total.....	133,000
1899.....	12,500		

Expenditure of reindeer fund, 1900-1901.

Amount appropriated.....	\$25,000.00
Salaries of employees.....	10,430.37
Supplies for stations.....	2,724.90
Coal for revenue cutter <i>Bear</i>	2,202.57
Freight.....	2,731.07
Printing reports, 1899-1900.....	909.75
Photographs and electrotypes for use in reports.....	39.64
Traveling expenses of general agent and assistant.....	337.07
Cost of 428 reindeer at \$13.12½ ^a	5,617.50
Balance.....	7.13
Total.....	25,000.00

^aTransportation charges on these deer, being paid from the appropriation for 1902, will appear in the next report.

EFFICIENCY OF NATIVE HERDERS.

The question has been asked of late: "How do the Eskimos take to the management of the reindeer?" The enterprise has been in progress for ten years, and during this time 30 to 35 herders have served an apprenticeship of two to five years. Twenty of them now have reindeer of their own. To those interested in the movement it is a question of moment whether the Eskimos show adaptation and inclination to the work. Mr. William T. Lopp, who is the agent of the American Missionary Association, and has had a herd since August, 1894, has from that date to this used exclusively Eskimo herders in the care and management of his herd, now numbering nearly 1,000 head. Mr. Lopp's apprentices had received a two-years' training under the direction of the Siberian herders, who, during 1892 and 1893, cared for the Government herd at Teller Reindeer Station.

Mr. Lopp has been so well satisfied with the efficiency of his Eskimo young men that he has steadily refused to receive a Lapp teacher in connection with his herd. The Rev. T. L. Brevig, who has been connected with the Teller Reindeer Station since 1895, and who has warm friends among the Laplanders brought by the Government from Norway for the instruction of native Eskimo men in the management of reindeer, says:

The native deer men have been faithful with the herd, and their efficiency has been demonstrated not only by their skill in driving between camp and the station and in hauling wood, but also by longer trips with freighting trains. And in this connection I would especially mention Kozebuk, a young man or boy about 17 years old, the youngest of the three mission apprentices. In May, he, with Johan Tornensis, took a train of eighteen loaded sleds to Tuttle Creek on the Arctic slope, about 65 miles from the station; Kozebuk, driving a string of five deer with loaded sleds, the four last being tied to the preceding sled. From there he alone took two harnessed deer with sleds and ten loose deer to Mr. Lopp's herd, 45 miles distant, returning to camp and in a week taking ten more deer to Mr. Lopp's herd. Returning to camp on June 1, he started for the station with four deer and eight empty sleds during the worst possible condition of travel, the snow melting and rivers opening, arriving at the station June 4 without accident and the deer in good condition, having traveled 245 miles with a string of deer and all alone, showing that natives can learn to handle deer. This is his first year's apprenticeship.

Francis H. Gambell, M. D., for the past two years superintendent of all the reindeer stations in Alaska, writes with reference to them as follows:

I find that they take an interest not only in lassoing and breaking the deer, but that they are anxious as to the outcome of their herds.

They are very quick at making harness and sleds, and take a great deal of pride in doing their work well.

While I do not consider them as efficient as the Laplanders, nevertheless I think that the deer would go on and increase were outside influences removed and they (Eskimos) were left wholly in charge of the respective herds.

Lieut. E. P. Bertholf, Revenue-Cutter Service, who was one of the Point Barrow Relief Expedition of 1898, testifies:

In January, 1898, I was en route with provision from St. Michael to Kotzebue Sound. At the head of Norton Sound I found a scarcity of dog teams, whereupon I applied to the Laplander in charge of the Government herd of reindeer, near Cape Denbeigh. Dr. Kittleson was at the time superintendent of this herd, which was on its way from Teller Station to Eaton Station. But Kittleson had gone on toward Cape Prince of Wales with Lieutenant Jarvis, leaving Mikkel in charge of the herd. Mikkel was willing to loan me five sled deer, and send one of his Lapland herders along if I could get Okitkoon, a native Eskimo herder, who belonged to the Golovin Bay Station, to accompany me, saying he would trust Okitkoon with the deer anywhere. This is a practical demonstration of the Laplander's idea of an Eskimo herder. * * *

On the morning of February 15, 1898, Mr. W. T. Lopp, a missionary at Cape Prince of Wales, while en route to Point Barrow with the deer herd intended to relieve the starving whalers at that point, left Cape Espenberg to cross over Kotzebue Sound on the ice to Cape Kruzenstern. This was some 50 miles over very rough ice. He had with him over 400 deer and several Eskimo herders, all belonging to his mission at Cape Prince of Wales. No Laplanders were among the party. By nightfall they had crossed over to within 15 miles of the other shore, when they decided to rest for the night. Thinking the deer would be too tired to stray all hands turned in. The next morning at 5 o'clock when they awoke nothing was to be seen of the deer herd except the sled deer, which had been tethered the night before and consequently were still in view.

Realizing the fact that during the night the deer, becoming hungry, had started back to where their instinct told them there was moss, Mr. Lopp immediately dispatched two herders to trail up the deer and bring them back, while the rest of the herders kept on with the deer train to the village of Anyok at Cape Kruzenstern. At 5 in the morning of the 16th, they started on the back trail to hunt the deer. They found the herd some few miles from the shore at Cape Espenberg. They turned this herd, started them back toward Kruzenstern, drove them all that day, all the succeeding night, and reached shore at Kruzenstern at 3 o'clock in the morning of the 17th, having thus been on their feet driving the deer from 5 a. m. of the 16th until until 3 a. m. of the 17th, without a single thing to eat.

This incident would seem to me to indicate that these Eskimo herders showed intelligence and faithfulness. When they had tracked the deer to within a few miles of the shore at Espenberg they could have driven them to shore, found feeding ground, and sought shelter and rest for themselves before returning to Mr. Lopp; but they were filled with a sense of responsibility, knowing that Mr. Lopp was in a hurry and was making all haste to get the herd to Point Barrow. Consequently, when they had tracked the herd they did not stop for a minute, but started right back with them to drive the deer to the other side where Mr. Lopp was waiting. * * *

When Mr. Lopp and myself left Anyok (near Cape Kruzenstern) with the deer herd, on the 21st of February, it had been decided to send back to their homes four of the native herders then with the herd, and these were consequently left behind at that place, provision having been made for their return travel.

Having accompanied Mr. Lopp and the deer herd along the coast as far as the place where he was to strike across the lagoons for the Kivalena River, I parted company with him on February 27 and proceeded to this place, in accordance with previous orders from Lieutenant Jarvis. Here I received word, on March 21, that some of our deer were at Anyok in charge of two of the herders. I sent word to them to drive the deer up here, and on August 21 the herd reached this place in charge of Ituk and Keok. It appears that somewhere between Anyok and the Kivalena River

these deer, 34 in number, had strayed from the main herd unnoticed, and a native who had acted as guide had discovered them on his return to Anyok. As the four herders had not yet started on their return trip to their homes, they went after the deer and drove them back to the village, after which they all started for their homes at Cape Prince of Wales, except Ituk and Keok, who then drove the small herd here. Three deer had been killed for food on the way, so that when they reached here there were 31 in the herd, 26 of them being females. I gave the herders my tent and camp gear, employed three young natives to help them, and sent them with the deer several miles back into the hills, where the moss was good and they would not be troubled by the dogs from the villages. There the camp was established and the deer cared for.

Here was a case where four Eskimo herders were on their way home, after some particularly hard work driving the deer herd. They discovered these strayed deer, sent word to me, and then awaited my instructions; and when I sent word to them to drive those deer to me at Point Hope there was no hesitation on their part. They decided among themselves which two of them should return and which two should go home, and without one word of complaint these two simply performed what seemed to them their natural duty.

TRIP OF LIEUT. E. P. BERTHOLF, REVENUE-CUTTER SERVICE, TO SIBERIA.

Information from various sources having reached the Bureau of Education that in the neighborhood of the Okhotsk Sea a breed of reindeer flourished that is larger in stature than those we have been importing from northern Siberia, it was decided to endeavor to obtain a supply of deer from those herds which would still further improve our present stock and result in giving to Alaska a breed of reindeer superior to that of any other country.

First Lieut. E. P. Bertholf, United States Revenue-Cutter Service, one of the officers of the revenue cutter *Bear*, was one of the three members of the expedition sent by the Government during the winter of 1897-98 to drive a herd of reindeer from Point Barrow for the relief of over 300 shipwrecked whalers believed to be starving at that place. The success of that expedition called the attention of the Commissioner of Education to him as a suitable person to send to Okhotsk Sea to procure, if possible, a number of the Tunguse deer of that section, and a request was made through official channels for his service, which was granted.

Accordingly this officer, having been detailed by the Secretary of the Treasury for duty under the Secretary of the Interior, was dispatched to the neighborhood of the sea of Okhotsk and directed to make a full investigation of the subject and if possible to procure a number of these large reindeer for Alaska.

Furnished with the necessary credentials from the State Department to the Russian authorities, Lieutenant Bertholf left Washington on January 11, 1901, and proceeded to St. Petersburg in order to obtain official sanction of his undertaking. On February 24, with ample commendations from the imperial ministry of the interior to the

governors-general of Irkutsk and eastern Siberia, he left St. Petersburg and proceeded to Moscow. From this city his route lay across European and Asiatic Russia via the Trans-Siberian Railway to Irkutsk on Lake Baikal. At this place he left the railway and purchased fur clothing, arms, and provisions for himself and interpreter, traveled by sledge down Lena River to Yakutsk and thence across the country to Okhotsk. From this point he proceeded along the coast, and on April 29 reached Ola, a small village on the west shore of the Okhotsk Sea, about midway between the towns of Okhotsk and Gishega and inhabited by half-breed Russian Tunguse, the latter belonging to one of the more civilized tribes of Siberian natives.

Here he found himself in the heart of the country in which flourishes the superior breed of reindeer known locally as "Tunguse" deer, and, armed as he was with the sanction of the Russian authorities, he was able to purchase a herd of 428 of these animals, using money in the transaction, for the Tunguse natives of that section have been in contact with the Russians so long that they both understand and appreciate that article.

A corral was built and a supply of moss gathered, and when the ice of the Okhotsk Sea broke up in the spring and the Russian mail steamer arrived, Lieutenant Bertholf took passage to Vladivostok, where he arrived July 17, 1901. Here he chartered a small Russian steamer, went back to Ola, took on board the herd he had purchased, and proceeded to Alaska, arriving at the Teller reindeer station, Port Clarence, August 29, 1901.

Unfortunately the weather was very boisterous and the steamer experienced such rough seas on the trip from Ola to Alaska that many of the reindeer succumbed and 254 in all were landed at the Port Clarence station.

In traversing Siberia to reach the shores of the Okhotsk Sea, Lieutenant Bertholf traveled 3,000 miles by sledge, driving at different times horses, reindeer, and dogs, and in his report on his expedition and the observations of this officer on the various uses to which the reindeer are put in Siberia he shows the important part these animals are playing in the development of that country.

Between Yakutsk and Okhotsk, a distance of 754 miles, is a post road, over which the mails are sent twice a month during the long winter, and on the greater part of this route reindeer are used. The animals are changed at stations that average about 50 miles apart, and in good weather the reindeer usually cover the distance between the stations in from six to seven hours.

There are two ports on the Okhotsk Sea from which the "brick tea" (tea pressed into brick-shaped blocks weighing 2 pounds each and used by the Russian peasantry) is transported to the Lena country, Okhotsk, and Ayan. The tea from Okhotsk is sent to Aldan, 510 miles, where it is stored until summer and then shipped by steamer down

the Aldan River to the Lena. From Ayan the tea is transported to Nelkan, 300 miles, and from there shipped the following summer down the May River to the Lena. All this transportation in winter is done with the reindeer, and Lieutenant Bertholf passed many deer caravans between Yakutsk and Okhotsk, one day alone counting over 200 sleds loaded with "brick tea" bound from Okhotsk to Aldan.

Ola, Siberia, is the point whence is transported overland all the stores for the penal colonies and other villages on the lower Kolima River. There are Government and private warehouses at Ola, in which the goods are stored when brought by the steamers in summer. In the winter these goods are carried by deer sleds some 400 miles to a place called Cemechan, at the head of navigation of the Kolima, and the following summer floated down that river on flatboats. This route was opened five years ago by a Cossack named Kalinken, who has controlled it ever since, having the contract to transport not only all the Government stores but also the goods of the private merchants. The contract price is 4 rubles (\$2) a pood (36 pounds) from Ola to Kolima, whereas before this route was established all the goods for the lower Kolima were sent from Yakutsk mainly with horses, and cost 12 rubles (\$6) a pood. Kalinken owns only about 500 reindeer himself, and consequently depends for his transportation almost entirely upon the natives of this region, whose deer he employs. During the winter over 1,000 sleds leave Ola at different times, bound for Cemechan, in caravans of about 100 each. With a caravan of 100 sleds belonging to one outfit there would be about ten men, each managing a train of ten sleds, he driving the head team while the other teams are tied by their halter lines to the sled in front. As each sled has two deer and each train has extra deer for emergencies, it will be seen that some 2,500 reindeer are used on this route alone.

Each sled carries 15 poods (540 pounds), which makes a total of at least 15,000 poods (540,000 pounds), and as the difference between the cost of the deer caravans from Ola and the old horse caravans from Yakutsk, both bound to the same place, is 8 rubles a pood, over 120,000 rubles, or \$60,000, is saved to the Government each year by the establishment of this deer caravan route from Ola to the Kolima River. For this service the Russian Government has presented to Kalinken a medal.

These instances are but a few of the many cases wherein the Russians are using the reindeer for transportation, and the important part these animals are playing in the development of Siberia is full of suggestion regarding the possibilities of the reindeer in the development of that part of our country bordering on the frozen seas, namely Alaska.

HERDS BECOMING A SOURCE OF PROFIT.

In the growth of the reindeer enterprise a few of the herds, notably that at Cape Prince of Wales, have reached such numbers that the

owners are able to kill off, to a limited extent, a portion of the extra males for food for the families of the herders, and also for sale to the butchers in the neighboring mining camps, where the deer last winter brought from \$60 to \$100 each, the proceeds of the sale supplying the families of the herders with clothing and household appliances. In addition to supplying the market with venison, a few male deer trained to harness were sold to miners at \$150 apiece, to be used in freighting and traveling. This also furnished employment to Lapps, who were employed as drivers. The herders at Cape Prince of Wales received last winter \$600 in gold for freighting with their reindeer to the mining camps. Smaller sums were earned in a similar way at one or two other stations. It is only a question of a few years of considerate care of the herds when the missionary societies will have herds sufficiently large to enable them to dispose of the extra males for a sum equal to the annual expenses of the station.

REINDEER TRANSPORTATION.

Mention has already been made in this report of the employment of the reindeer at Eaton Station for the relief of the troops snow-bound near Kaltag, and afterwards for the transportation of telegraph poles, telegraph supplies, and provisions for the men engaged in building the telegraph line between Norton Sound and the Yukon River. Also for the employment of reindeer teams from the Teller Reindeer Station for a military expedition to Kotzebue Sound to relieve the reported destitution of the natives in that section. In addition to this official work the reindeer belonging to private parties at Teller, Synrock, Cape Prince of Wales, and Golovin stations did considerable transporting of men and supplies to various outlying mining camps. As the number of available reindeer for transportation purposes increases in the country they will commence more and more to take the place of dogs used in the past for transportation. As the reindeer is the only draft animal in Arctic regions that is able to secure its own food while on a journey, the question of cheapness and speed will finally win the day in favor of the reindeer. In that day Alaska, with similar conditions of climate and pasturage to those existing in Lapland and Siberia, will, as commonly as those countries have for centuries past, use the reindeer for draft purposes. (See page 22.)

REINDEER RELIEVE UNITED STATES SOLDIERS.

As the report of 1900 was closing, letters were received from Dr. Gambell, superintendent of the reindeer stations, with the information that two detachments of United States infantry had been rescued by reindeer teams sent from the station. It appears that at the opening of last winter the War Department had three construction parties, aggregating about 110 officers and enlisted men, engaged in the work of

building a Government telegraph line between Unalaklik and Kaltag, on the Yukon River. As the winter storms came on one after another, all work had to be suspended, rations began to fail, and mule transportation gave out. Even where the soldiers shoveled a trail through the deep snow the mules marked their course with blood from their legs, cut with the icy crust on the snow. In this emergency General Randall, in command of the military department of Alaska, requested Dr. Gambell to take all the deer teams that could be spared and go to the relief of the Government party. Accordingly, on the 4th of December, Dr. Gambell started with 3 deer, leaving Mr. Lindseth to follow the next day with 32 deer and the necessary drivers and sleds. The troops were found in camp 18 miles west of Kaltag, and with their camp equipage were brought through deep snow to a new camp established near Old Woman's Mountain, a distance of 50 miles. The troops being left in a place of safety, the deer teams were sent, at the request of the commanding general, to St. Michael for the transportation of provisions for the men, and telegraphic supplies. They were also employed during a portion of the winter in drawing telegraph poles from the woods.

There are persons in the United States who consider the sum of \$25,000 appropriated annually by Congress during the last few years for the introduction of domestic reindeer into Alaska as money uselessly expended. They have given little thought to the fact that in this appropriation the country is providing for emergencies that are liable to happen at any time, and which are sure to come sooner or later, when numbers of our fellow-citizens who are now penetrating the frozen lands of Arctic Alaska in search of gold will be saved to their families and country by this enterprise. When in 1897 the chambers of commerce of San Francisco, Portland, Seattle, and Tacoma wired the President that large numbers of American miners in the Yukon Valley were in danger of starvation Congress without hesitation voted \$200,000 to the Government for the relief of the miners. Happily in that case the relief was not needed, but a little later, in the same season, word was received that 400 whalers had been caught in the ice in the neighborhood of Point Barrow with only three months' provisions in their ships, and that the ships would necessarily be detained for twelve months, if not sooner crushed in the ice before they could escape, and that starvation faced the whalers. The country did not hesitate to indorse the action of the President and his Cabinet in instituting a relief expedition, which ultimately cost nearly \$100,000 for the rescue of those men. The revenue cutter *Bear* was at once dispatched northward, but on account of the arctic ice could not get within many miles of the starving men. Two lieutenants and a surgeon were put ashore near Nunivak Island to make a winter sledge journey of nearly 2,000 miles. They could take no provisions for the

starving sailors. They had difficulty in taking sufficient provisions for the three men. There was no known method by which flour, groceries, and clothing could be taken to the whalers. Had not the Government five years previous commenced the introduction of domestic reindeer into Alaska many of those 400 men would have certainly perished before relief could have reached them. But the rescue party, gathering up the reindeer at two stations, successfully made the trip through an unknown country in midwinter, during the long arctic night, reached the sailors, slaughtered reindeer, issued rations as needed, nursed the men stricken with scurvy back again to life, and ultimately restored them twelve months later to their friends and country.

In years to come other men will receive similar rescue through the instrumentality of the reindeer herds, fostered by this small annual appropriation.

BRANDS.

In the multiplication of herds to missionary societies and Eskimo it has become necessary to establish a system of branding by which the property of each individual may be distinguished from all others by the marking of the ears of the reindeer, these markings representing nineteen ownerships.

REINDEER PRESERVES.

On the 30th of March, 1901, the President issued the following Executive order:

EXECUTIVE MANSION,
March 30, 1901.

It is hereby ordered that the hereinafter-described tracts of land in the district of Alaska be, and they are hereby, reserved and set aside for reindeer stations, subject to any existing legal rights to any land in the limits of the reservation hereby established, to wit:

1. The entire peninsula of which Cape Denbigh forms the southwestern extremity, situated in latitude 64° 30' north, longitude 161° 30' west from Greenwich, approximately 15 miles in length and 5 miles in width.

2. A tract of land bounded as follows: Beginning at a point about 6 miles above the mouth of the Unalaklik River, and extending along the north bank of the Unalaklik River in a generally northeasterly direction 10 miles, thence in a generally northwesterly direction 10 miles, thence in a generally southwesterly direction 10 miles, and thence in a generally southeasterly direction to the point of beginning.

WILLIAM MCKINLEY.

COOPERATION OF TREASURY, STATE, AND WAR DEPARTMENTS.

The cooperation of the honorable the Secretary of the Treasury and of Capt. Charles F. Shoemaker, Chief of the Revenue-Cutter Service, has been freely extended as in past years, granting transportation on the revenue cutters *Bear*, *Rush*, and *Thetis* to the general agent and his clerk; also to Government teachers and their supplies to

various stations in Alaska that are inaccessible by ordinary commercial vessels. The kindness of Capt. Francis Tuttle and the officers of the *Bear*, Capt. William F. Kilgore and officers of the *Rush*, and Lieut. William H. Cushing and the officers of the *Thetis* was appreciated.

Thanks are due to the honorable the Secretary of War, Brig. Gen. M. L. Ludington, Quartermaster-General, Brig. Gen. Chas. Bird and Capt. D. S. Stanley, U. S. A., in command of the army transport *Warren*, for transportation from Seattle to Nome, and for many kindnesses on the route.

Thanks are also due to the honorable the Secretary of State and Hon. Charlemagne Tower, ambassador to the court of Russia, for credentials procured from the Russian Government, and letters of commendation of Lieut. E. P. Bertholf, Revenue-Cutter Service, to the governors of Irkutsk and Eastern Siberia.

For illustrations accompanying this report I am indebted to Lieut. E. P. Bertholf, Revenue-Cutter Service; Engineer H. W. Spear, Revenue-Cutter Service; Surg. R. N. Hawley, Revenue-Cutter Service; Lieut. H. R. Hickok, U. S. A.; Mrs. S. Bernardi, and Messrs. N. P. Xavier, Joseph Say, T. L. Brevig, F. C. Duffield, E. A. Hegg, and Rev. Robert A. George, D. D.

ITINERARY.

Leaving Washington on the 1st of May and spending Sabbath, the 5th, at Salt Lake City, Seattle was reached the 8th, where I was expected to go on board the revenue cutter *Bear*, which was scheduled to sail on the 10th. Mr. A. R. Cheever, who had been detailed as my clerk, was awaiting my arrival at Seattle. Upon inquiry I found that in the repairs which had some months before been ordered on the *Bear* a portion of the boiler works had been removed from the ship, and before the new works were substituted the machinists' strike, which existed in all the leading cities of the Pacific coast occurred, and work upon the *Bear* as well as other vessels ceased. Captain Shoemaker, Chief of the Revenue-Cutter Service, learning that the cutter *Bear* could not be fitted for sea in time for an early cruise, proposed that we should change to the cutter *Thetis*. Upon further investigation it was found that the *Thetis* also was unprepared for sea. Through the effects of the machinists' strike I was unable to proceed farther on my journey for one month. On the 27th of May, concluding that the cutters might be detained all summer for repairs, I telegraphed the War Department for transfer on the United States army transport *Warren*, which was expecting to sail for Nome. This request was promptly granted, and on the 8th of June we went on board the transport, which sailed at noon of that day. It was the intention of Captain Stanley to proceed directly to Nome without calling at Unalaska, but when 30 miles southeast of the Pribilof Islands the transport met ice, and the sailing captain recommended to Captain Stanley that the steamer

should return to Unalaska for information as to the condition of northern Bering Sea. Reaching there, on the 18th we learned that with two exceptions no steamer had been able to reach Nome this season, that four attempts had been made to reach the Pribilof Islands by local steamer in vain, and that a steamer was at sea at present making the fifth attempt. The ice was reported several miles below the southern limit reached in many years; we were also informed that the winter ice had not yet left Norton Sound. This delay at Unalaska gave me an opportunity to inspect the public school and look after school matters at that place. After lying at anchor in Unalaska Bay a few days the captain decided to make another attempt, and on the 22d day of June we again started for Nome. Passing through small fields of floating ice and skirting ice floes many miles in extent, we reached Nome on the morning of June 28. The surf was so bad, however, that we were unable to land until the 29th. The news at Nome with regard to the harbor at St. Michael was very discouraging; several vessels had made the attempt but found that Norton Sound was still full of winter ice and that no vessel had been able, on account of the ice, to get within 12 miles of the shore. On the 3d of July Captain Stanley determined to go as far as he could toward St. Michael, thinking that he might, perhaps, be able to communicate with the commanding officer over the ice. Upon arriving within sight of the place on the forenoon of the 4th of July we found that the ice had left the harbor the day before. At St. Michael I met Dr. F. H. Gambell, superintendent of the reindeer station, and his assistant, Mr. J. T. Lindseth; also the Rev. and Mrs. A. E. Karlson, who were waiting an opportunity to reach their mission station at Unalaklik. Being anxious to reach the Eaton Reindeer Station as soon as possible, diligent search was made for a boat, steam launch, or some conveyance to Unalaklik, 60 miles up the coast. While the search was being made the schooner *Laurel*, loaded with Government supplies for the Eaton Reindeer Station and the Swedish Mission at Unalaklik, came into the harbor, and at 1 o'clock on the morning of July 6 we all went aboard the little vessel and started for Unalaklik. The wind dying out, we were all day making the trip, and did not reach there until half past 5 in the afternoon. As the sea was calm the natives with their boats were at once secured and started unloading the freight, the work being continued until midnight. On the 8th the unloading of the ship was resumed and completed on the 9th. That same afternoon the army launch *Nordica* steamed into the mouth of the Unalaklik River, bringing supplies for the men in charge of the military telegraph station at that point. The officer in charge of the launch, having instructions to receive myself and party on board, took us to St. Michael. At 8.15 on the morning of the 10th we left Unalaklik, and at 5.30 p. m. that afternoon were safely on board the transport *Warren* in St. Michael Harbor. July 13 the army transport

Warren, with the army transport *Seward* in tow (the latter being disabled), left for Nome, where we arrived on the following day about noon. Dropping anchor off Fort Davis, the vessel was soon visited by Dr. S. J. Call, the quarantine officer, who upon his return to shore very kindly took my clerk and myself on board his launch.

On July 16, finding that the steamer *Sadie* was about to leave for Teller City, we went on board, and that night were accorded the courtesy of a special landing at the Teller Reindeer Station, instead of being taken 6 miles beyond to the Teller mining camp. A week was pleasantly spent in the family of Rev. T. L. Brevig, a Norwegian missionary and Government superintendent of the reindeer station, in inspecting the work and reviewing the affairs of the station. On the 24th we took the steamship *Jeannie* to return to Nome and await the arrival of a revenue cutter to enable us to visit and inspect the Gambell Station on St. Lawrence Island. On July 31 the cutter *Bear* arrived and dropped anchor in the harbor. Soon after Captain Tuttle sent a boat ashore for the ship's mail and with an invitation to myself and party to come on board. At 7 p. m., August 1, anchor was raised and we sailed away for St. Lawrence Island, reaching there during the afternoon of August 3. Some supplies were landed for the station, the station was inspected, and conferences held with the natives. Dr. Lerrigo, who had been in charge of the station during the previous year, receiving information by the whalers of the dangerous illness of his mother, had left the place in June, leaving the station in charge of Mr. William A. Egan, Dr. E. O. Campbell, who had been appointed to succeed Dr. Lerrigo, not having arrived.

Leaving Gambell on August 4, we reached Teller Reindeer Station August 6. Dr. H. Richmond Marsh, wife and child, and Mr. Peter Koonyooa and wife (Eskimo) were waiting an opportunity to reach their distant Arctic field at Point Barrow. Captain Tuttle kindly offering to take them to their station, on August 8 they came on board with various supplies, and at 11 a. m. we sailed for Cape Prince of Wales, where Dr. Gambell, Mr. Cheever, and myself were left to visit Mr. Lopp and confer with him concerning the interests of the reindeer herd in his charge.

On August 14, the cutter *Thetis* having arrived and unloaded some supplies for the station, through the courtesy of Lient. W. H. Cushing, commanding, myself and party were received on board for transportation to the Teller Reindeer Station, where we arrived on the 15th. Two days later (the 17th) we took the steamship *Newsboy* for Nome, reaching there the next morning. The surf being bad, it was after midday before we were able to reach the shore. Receiving a telegram from the Commissioner of Education notifying me that Lieutenant Bertholf had succeeded in securing a number of reindeer in the neighborhood of Ola, Okhotsk Sea, Siberia, and directing me to return to

Teller Reindeer Station and await the arrival and landing of the deer, on August 25 we took the steamer *Jeannie* for Teller, where we arrived the following day. On August 28 the Russian steamship *Progress*, with Lieutenant Bertholf and the reindeer on board, arrived and dropped anchor in front of the reindeer station. A steam tug and lighter were at once secured at Teller City, and the work of landing the reindeer commenced. In the meantime Dr. and Mrs. Campbell arrived at Teller Station and were anxiously waiting an opportunity to be sent to their own station at Gambell. The arrival of the Russian ship, which, upon its return to Vladivostock, would pass St. Lawrence Island, gave them an opportunity. Accordingly they sailed on the 31st of August for St. Lawrence Island.

On September 5, taking the steamship *Oregon*, we reached Nome on the 6th. The cutter *Bear* having returned from its Arctic cruise to Point Barrow, on September 12 we went on board and Captain Tuttle very kindly took me to inspect the reindeer station at Synrock and confer with Mary Antisarlook, who, with her relatives, owns the herd. Finding that the herd had been interfered with by lawless whites and much of the pasturage in the immediate vicinity of the herd burned by fires started by the whites, I advised her to remove, during the coming winter, to the east side of Norton Sound, where she would be among her relatives and better protected from annoyance by white men.

Having now concluded the summer's work in Bering Sea, on September 16 we went aboard the steamship *Roanoke* for Dutch Harbor, where we arrived on the 18th. Not needing Mr. Cheever's services further at this time, I directed him to continue to Seattle and from there return to Washington. The same day, securing a stateroom on the mail steamship *Newport*, I left Unalaska for Sitka on the morning of the 19th at 5 o'clock. On the morning of the 20th, at 5.30, we dropped anchor at Belkofsky to leave the mail. During our short stop Father Alexander, the Russo-Greek priest, came on board especially to express his thanks to the Bureau of Education for allowing Mr. Golder, teacher at Unga, to teach English to his pupils during the summer vacation. At 3 p. m. that afternoon we dropped anchor in the harbor of Sand Point to deliver the mail. A short call was made on shore. At 5.30 Unga was reached, and I again went on shore to confer with the teacher of the public school. At 2.15 p. m. on the 21st a call was made at the salmon canneries at Chignik, and at noon on the 22d we reached Karluk, probably the largest salmon-fishery station in the world. That same afternoon a pleasant call was made at the salmon cannery at Uyak. At 6 a. m. on the 23d we entered the snug little harbor of Kadiak. This place was the original capital of the Russo-American possessions, the seat of government being removed from Kadiak to Sitka for political purposes and to restrain

the advance westward of the Hudson Bay Fur Company. At Kadiak is a Government school. There is also a Government school on Wood Island, a few miles distant. The larger portion of the day was spent in visiting these schools. At Wood Island the ship took on board a large grindstone that was left there by the Russians at the time of the transfer, and had been given by Mr. Ezekiel, manager of the North American Commercial Company's station at Wood Island, to the Alaskan Society of Natural History and Ethnology, whose museum is at Sitka.

Leaving Wood Island in the afternoon of the 23d, at 6 a. m., on the 24th, we dropped anchor in the little harbor of Seldovia on Cooks Inlet. After an hour's stay we steamed away for Homer, where an Eastern company is at work developing the coal mines of that vicinity. Leaving Homer about noon we steamed southward out of Cooks Inlet, rounded the southern end of Kenai Peninsula, and called at Fox Island on the 25th, where a number of blue foxes were taken on board to be transported to stock an island in southeastern Alaska. At 2 a. m. in the morning of the 26th, the new city of Valdez, at the head of Prince William Sound, was reached. In the neighborhood is a military camp, from which has been built a military trail, extending in a general northeast direction from Prince William Sound to Eagle City, on the Upper Yukon River, known as the "All-American Mail Route to the Interior of Alaska." The present Valdez is a very small village built on the moraine of the Valdez Glacier, but although a small place it has great expectations. It is the natural gateway to all central Alaska, and in anticipation of its coming greatness enterprising men have located seven different city sites in the neighborhood. The day was very pleasantly spent at this village waiting the arrival of the inland mail carrier, who had telegraphed ahead that he was coming. Leaving Valdez at 7.30 in the evening, on the next day, the 27th, we called at Orca. Nuchek was reached at 9.40 p. m., and Kyak at 9 a. m., on the 28th, and Yakutat at noon on the 29th. Yakutat is a large village of Thlinget natives. At this place the Swedish Evangelical Missionary Society have a promising station in charge of Rev. Albin Johnson.

Leaving Yakutat that afternoon, the mouth of Lituya Bay was reached at 5.30 a. m. on the 30th. The surf was so bad that it was not until evening that a landing could be effected.

Leaving Lituya that night, Sitka was reached October 1 at 2 p. m. The next eleven days passed quickly in visiting the schools and arranging school matters at Sitka. Capt. William F. Kilgore, commanding the cutter *Rush*, having offered to take me to the out-of-the-way villages of southeastern Alaska, on the 11th of October Governor Brady and myself went on board, and at 12.35 p. m. we were under way. The weather being heavy and stormy, we anchored that night

in Deadmens Reach at 5.24 o'clock. Getting under way at 7.30 a. m. October 12, we soon after passed the Coast and Geodetic Survey steamers *Patterson* and *Gedney* on their way to Sitka. The storm of the previous day continuing, we ran into Rodman Bay for shelter, and anchored at 9.40 a. m. After lunch we went ashore and visited the plant of a mining company at work on this bay. At 6 o'clock, on the 13th, we again got under way for Hoonah, stopping at 2.35 p. m. to take ice on board from a floating berg. At 3.50 p. m. Hoonah was reached, and we went on shore to visit the teacher, schoolhouse, and church. Nearly all of the villagers were still absent on their fall hunt. Getting under way at 7.10 a. m. on the 14th, at 2 p. m. we arrived at Angoon, where Governor Brady and myself went ashore to inspect the place with reference to the establishment of a school for the native children. At 5 p. m. the herring works at Killisnoo were reached. Starting at 6 o'clock on the 15th we steamed southward toward Wrangell. The day was stormy, and toward night, the fog setting in, at 7 p. m. the ship anchored at the north entrance of Wrangell Narrows. Getting under way at 7 o'clock the following morning, in half an hour we were anchored off the salmon cannery at Petersburg, where we went ashore and spent the forenoon. Getting under way at 11 o'clock, at 4.50 p. m. we reached Wrangell, where, during the afternoon, two visits were made ashore. On the 18th we reached Ketchikan. Here visits were made ashore both at Ketchikan and the neighboring places of Saxman and Gravina. Schools were inspected and conferences had with teachers and others. On the 19th we reached Karta Bay, Prince of Wales Island, where we anchored for the night. The next morning, hoisting the anchor, we steamed eastward some 15 miles to Copper Queen on Kasaan Bay. After a call on shore, a storm arising, we returned to Karta Bay for anchorage. Taking a fresh start on the morning of the 21st, we steamed to Skowls's village, known as Kasaan. This village is noted for the number and excellence of the totem poles that are still standing. A conference was held with Skowls, the chief, and others of the old men that were at home in the village, with reference to the removal of the population to Copper Queen, in order that they might have a school for their children and larger privileges for themselves. The Kasaan Bay Mining Company that control the copper mines and fisheries in the neighborhood of Kasaan having stipulated that if the Hydahs of that vicinity would remove to Copper Queen the company would give them permanent employment winter and summer, build them a schoolhouse, and church, prevent as far as possible the location of any liquor saloons in the vicinity, and assist them in the laying out a new village. Some of the prominent men being absent at Ketchikan, on the afternoon of the 22d we steamed away from Skowls's village to Ketchikan, and on the 23d another conference was held in the cabin of the cutter, and on

the 24th I took the steamer *City of Topeka* at Ketchikan for Seattle, where I arrived on the 27th. Leaving Seattle via the Northern Pacific Railway October 29, I reached Washington November 5, thus closing a trip of 15,400 miles.

SHELDON JACKSON,
General Agent of Education in Alaska.
The COMMISSIONER OF EDUCATION.

ILLUSTRATIONS FOR REINDEER REPORT,

1 9 0 1 .



MARY ANTISARLOOK, SYNROCK, ALASKA.

Photograph by Mrs. S. Bernardi. Page 12

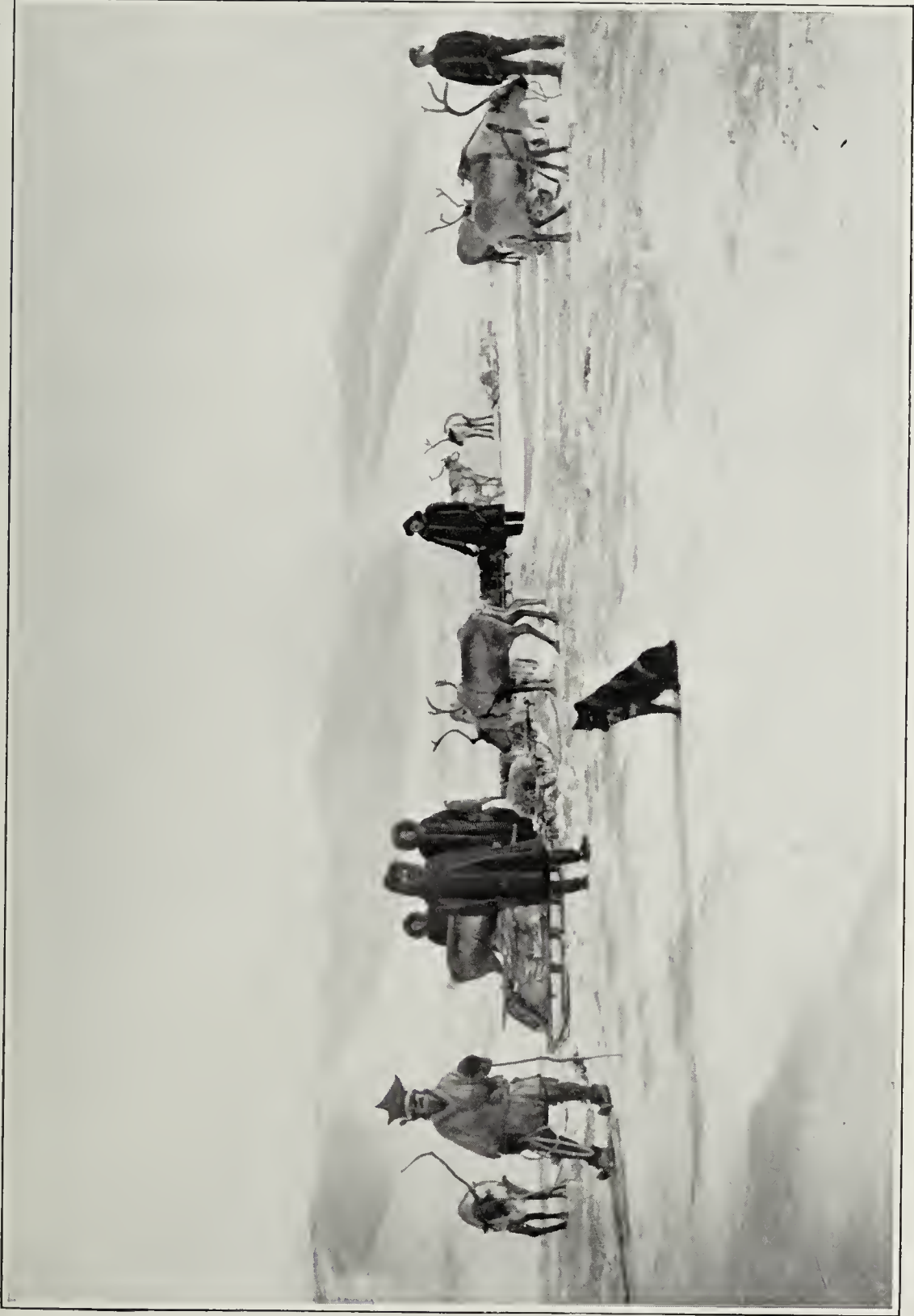


Mrs. M. G. Campbell.

Mrs. C. P. Coc.



A CORNER OF THE ESKIMO VILLAGE, CAPE PRINCE OF WALES. Page 14.



FREIGHTING WITH REINDEER, FEBRUARY 25, 1901, TELLER STATION, ALASKA.
Photograph by N. P. Xavier. Page 23.



FREIGHTING WITH REINDEER, FEBRUARY, 25, 1901, TELLER STATION, ALASKA.

Photograph by N. P. Xavier. Page 23.



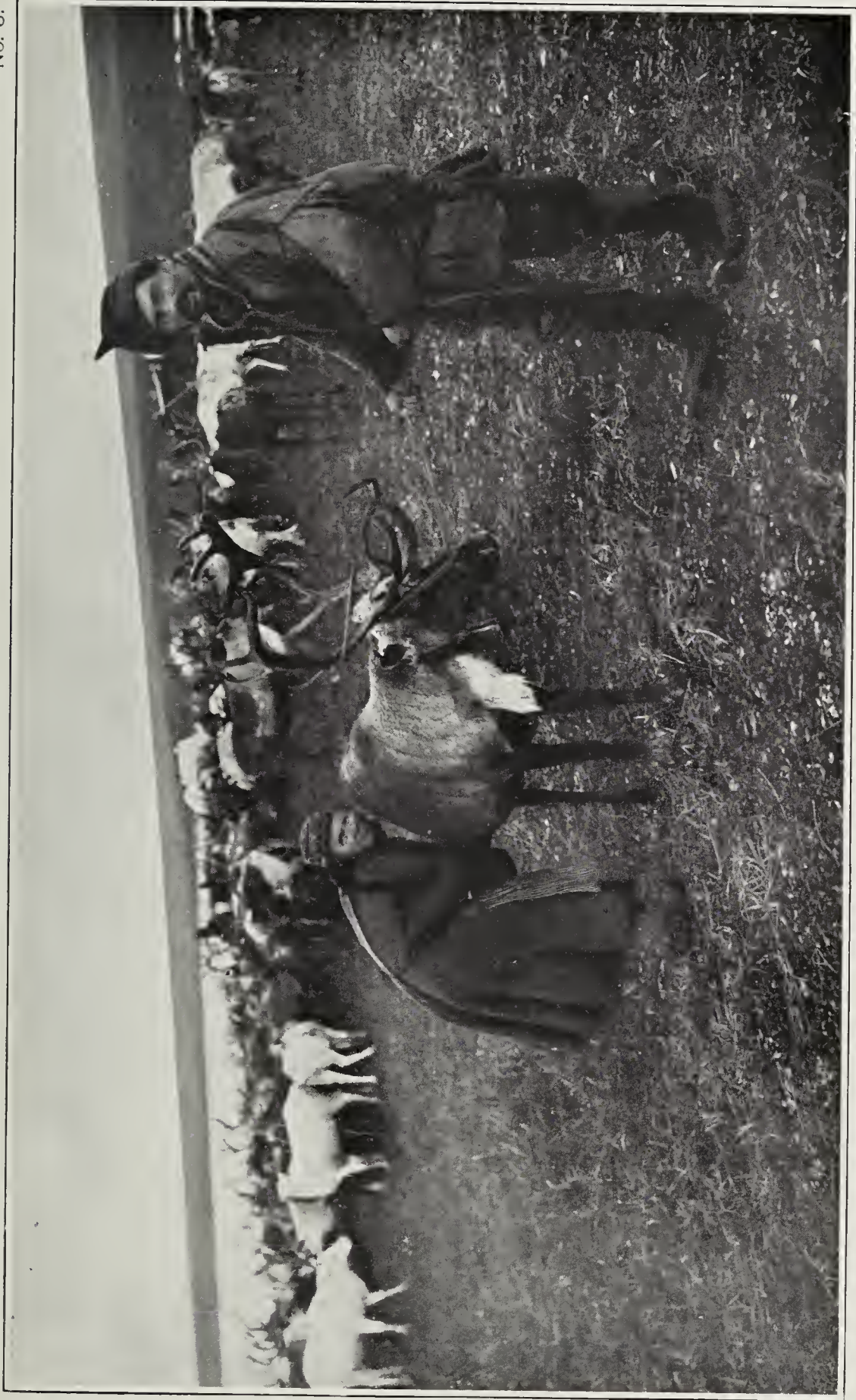
Tunnel to door.

HEADQUARTERS HOUSE, TELLER REINDEER STATION (WINTER). Page 13.



HEADQUARTERS HOUSE, TELLER REINDEER STATION (SUMMER).

Photographs by N. P. Xavier. Page 13.



LAPLANDERS MILKING REINDEER AT PORT CLARENCE, ALASKA.

Photograph by E. A. Hogg, Seattle. Page 13.



OWHAYA, ST. LAWRENCE ISLAND, ALASKA.
Photograph by R. N. Hawley, M. D., 1901. Page 28.



BEACH, POINT BARROW, AUGUST 17, 1901. LANDING FROM CUTTER BEAR.

Photograph by R. N. Hawley, M. D., 1901. Page 29,



PUBLIC SCHOOL, UNGA, ALASKA.
Photograph by F. C. Duffield. Page 29.



REINDEER HERD GRAZING.

Photograph by Rev. Robert George, D. D.



REVENUE CUTTER THETIS.

Photograph by R. N. Hawley, M. D. Page 26.



SHOO-LIK, ST. LAWRENCE ISLAND, ALASKA.
Photograph by R. N. Hawley, M. D., 1901. Page 28.



REV. J. H. SCHOECHERT, WIFE, AND CHILDREN, CARMEL. ALASKA.

Photograph by Donner Bros. Page 15.

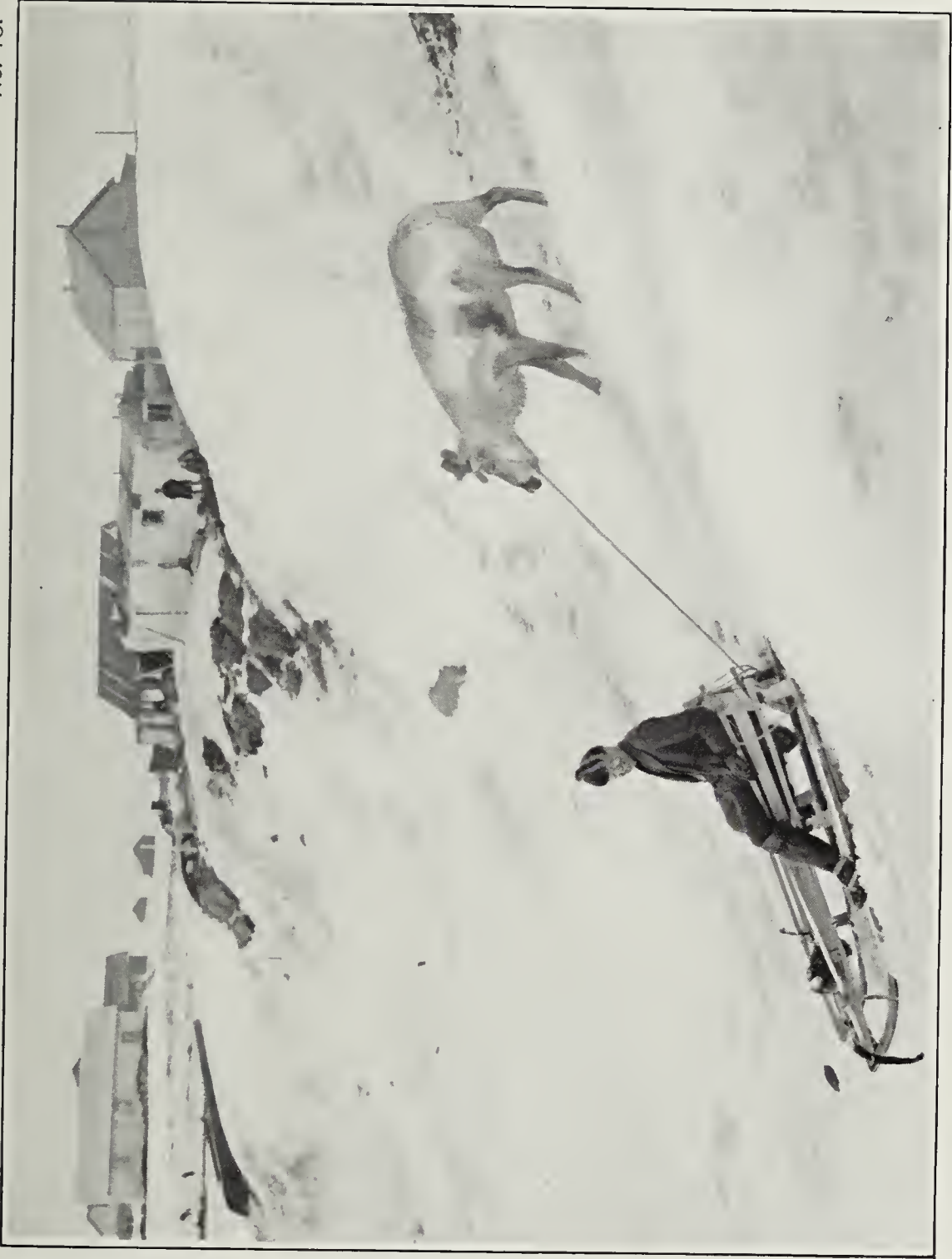


G. J. Beck. B. K. Wilbur.

THLINGET CADETS, SITKA TRAINING SCHOOL, SITKA, ALASKA. Page 30.



OLD TOTEMS, KASAAN, ALASKA, 1901.
Photograph by Chief Engineer H. W. Spear, R. C. S. Page 31.



TRAVELING DOWN A STEEP HILL WITH REINDEER.



UNLOADING REINDEER, ST. LAWRENCE ISLAND, ALASKA, 1900.
Photograph by H. W. Spear, R. C. S. (Reindeer Report, 1900, p. 21.)



LAPP MOTHERS WITH THEIR BABES.



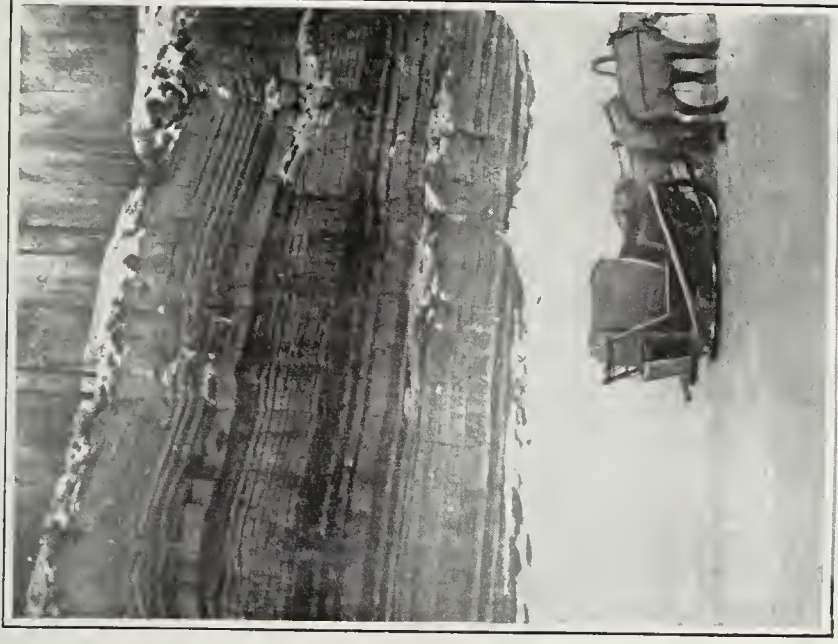
FRIENDS MISSION SCHOOL, DOUGLAS, ALASKA.

No. 22.



PAVOSKA, OR RUSSIAN TRAVELING SLED. Page 131.

No. 23.



ON THE LENA RIVER. Page 131.

NOTE.—Illustrations Nos. 23 to 28 and 32 to 42 are from photographs by First Lieutenant E. P. Berthoff, R. U. S.



REINDEER POST-STATION. Page 140.



CAMP ON THE ROAD. Page 140.



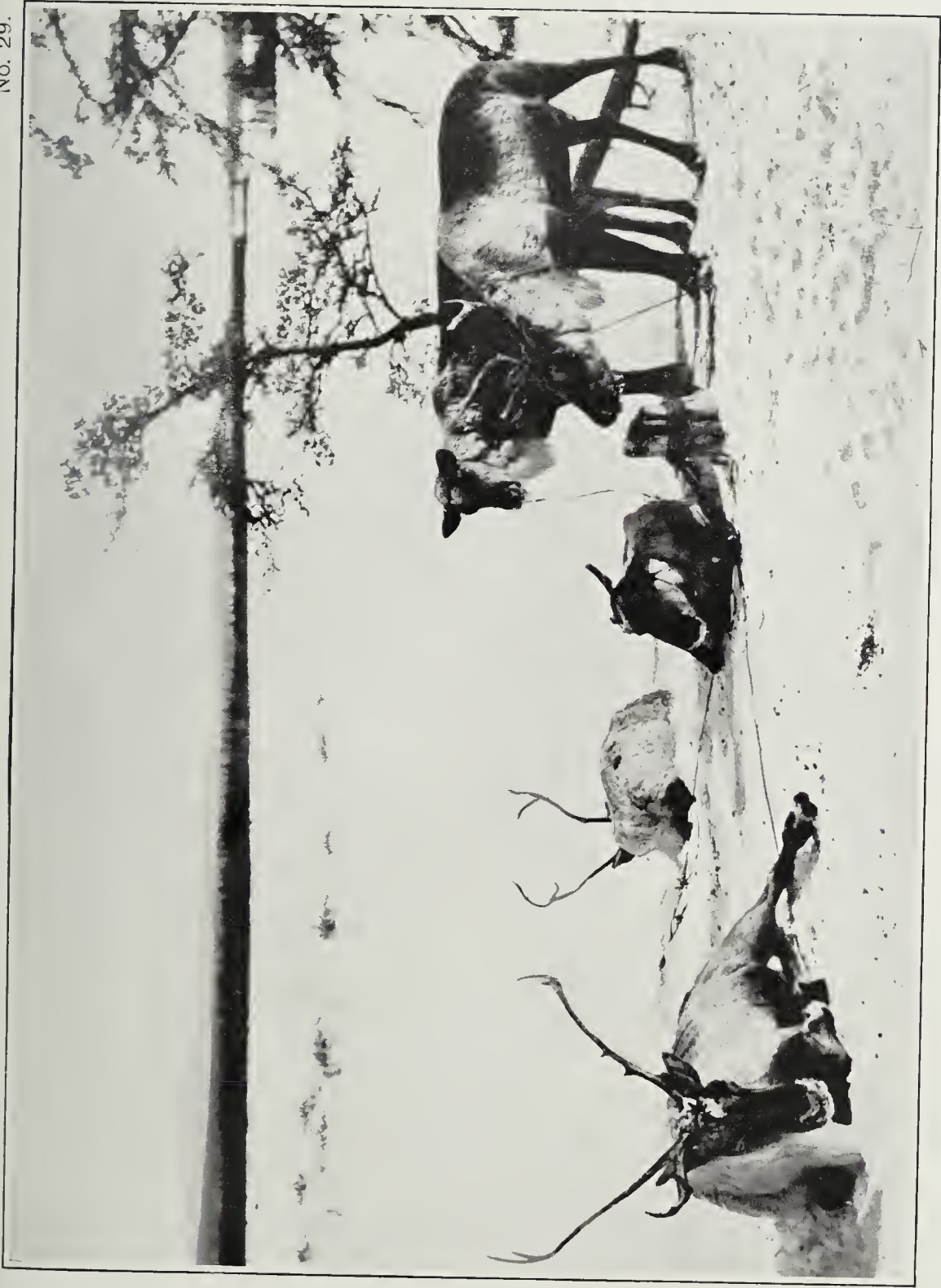
TRAVELING THROUGH DEEP SNOW. Page 141.



MOUNTED TUNGUSES. Page 142.



TUNGUSE FAMILY SHIFTING CAMP. Page 144.



TUNGUSE SLED DEER, TETHERED DURING A HALT. Page 143.



TUNGUSE TRAVELING DEER BACK. Page 156.



TRAVELING WITH REINDEER AND SLED IN SIBERIA.

No. 32.



GOVERNOR'S HOUSE AND BUILDINGS, OKHOTSK. Page 145.

No. 33.



SIBERIAN TRAVELING SLED. Page 137.

No. 34.



BETWEEN OKHOTSK AND OLA. Page 145.

No. 35.



NATIVE AND TRAINED SLED DEER—HERD IN THE DISTANCE. Page 143.

No. 36.



CORRAL FOR CATCHING AND HOBBLING THE DEER. Page 153.



DEER HOBbled READY FOR LOADING IN THE BOATS. Page 159.



LOADING DEER INTO BOATS. Page 159.

No. 39.



MANNER OF CARRYING CHILDREN WHEN TRAVELING IN SUMMER.

No. 40.



TWO TUNGUSE DEER-MEN WHO OWN SOME 6,000 DEER. Page 138.

No. 41.

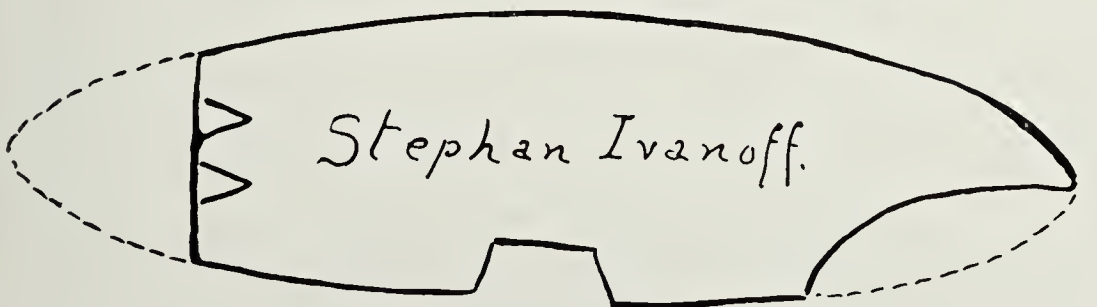
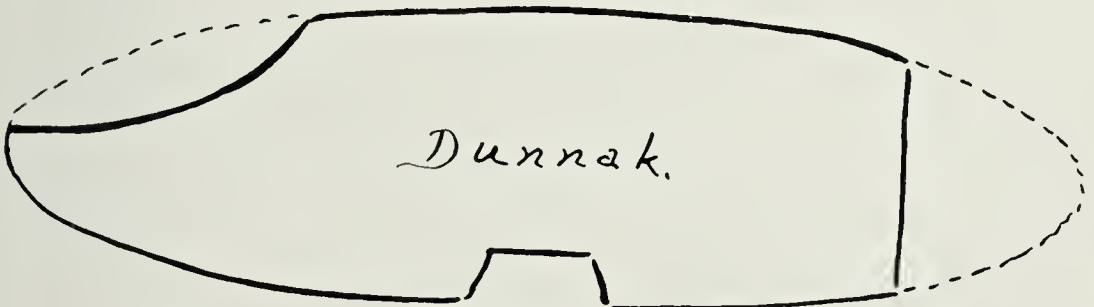
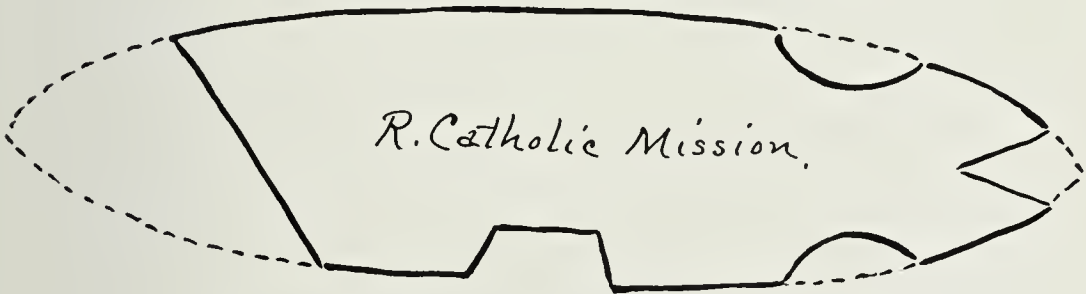
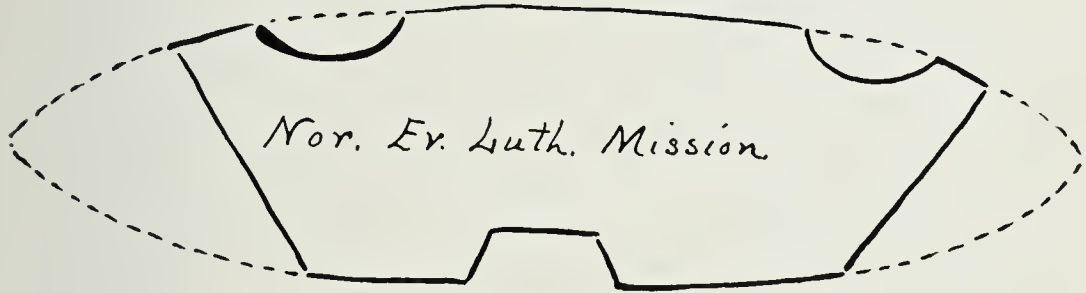
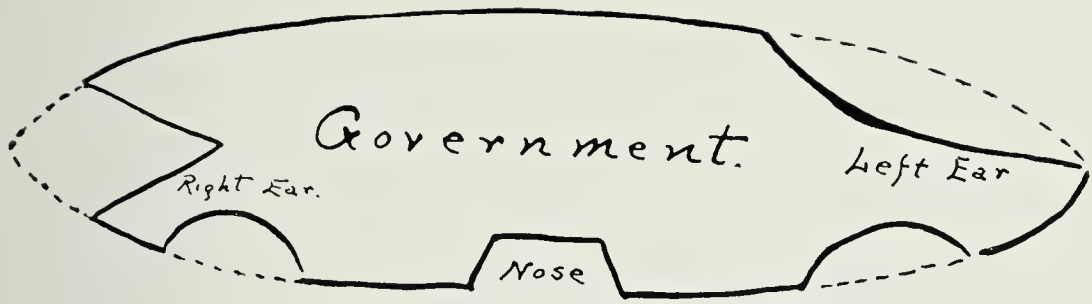


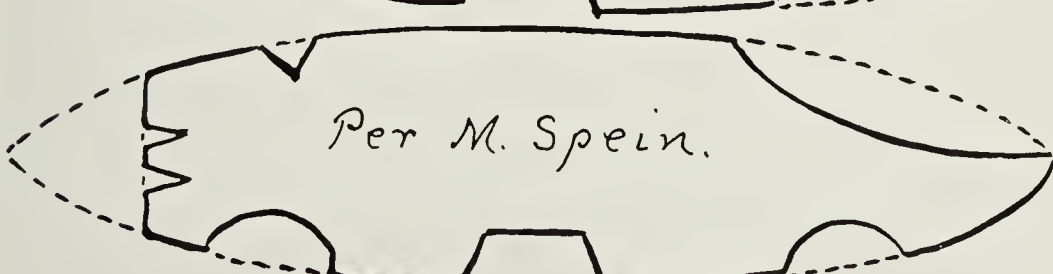
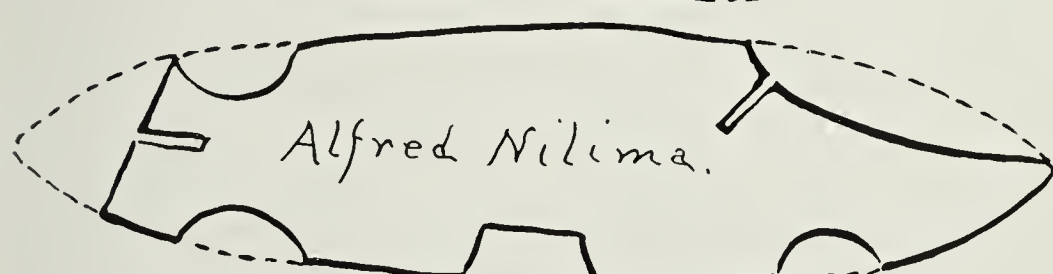
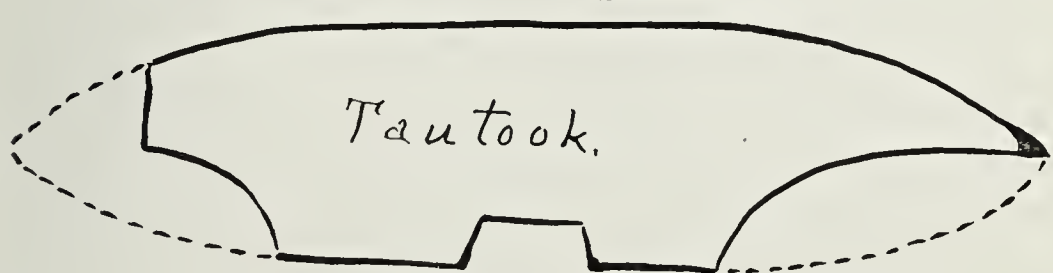
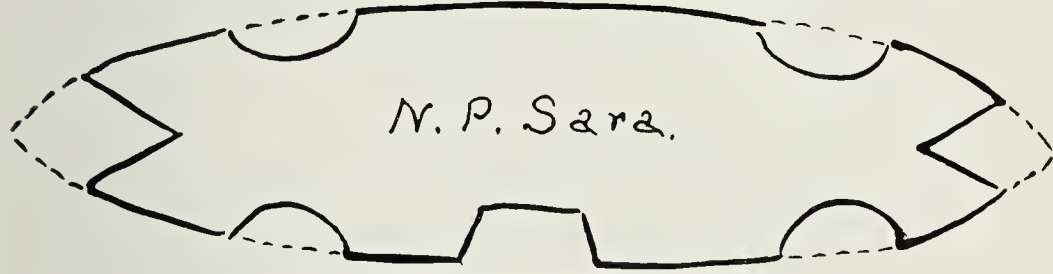
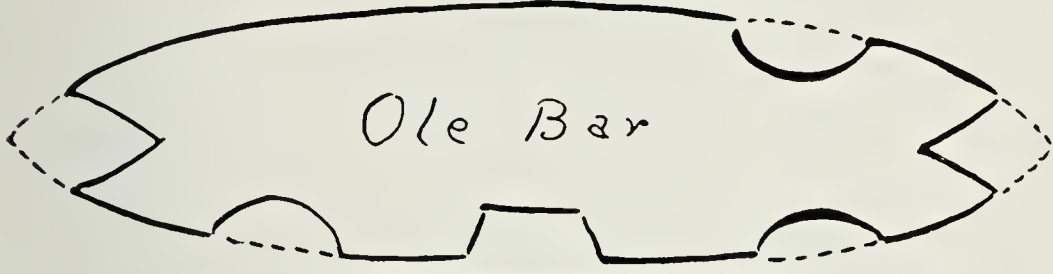
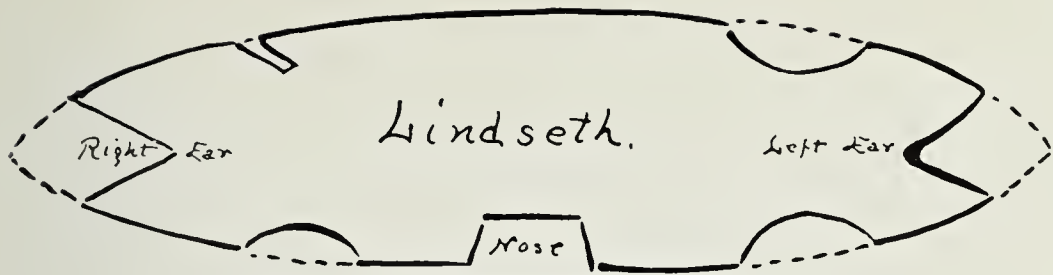
MOUNTED TUNGUSE, IN SUMMER.

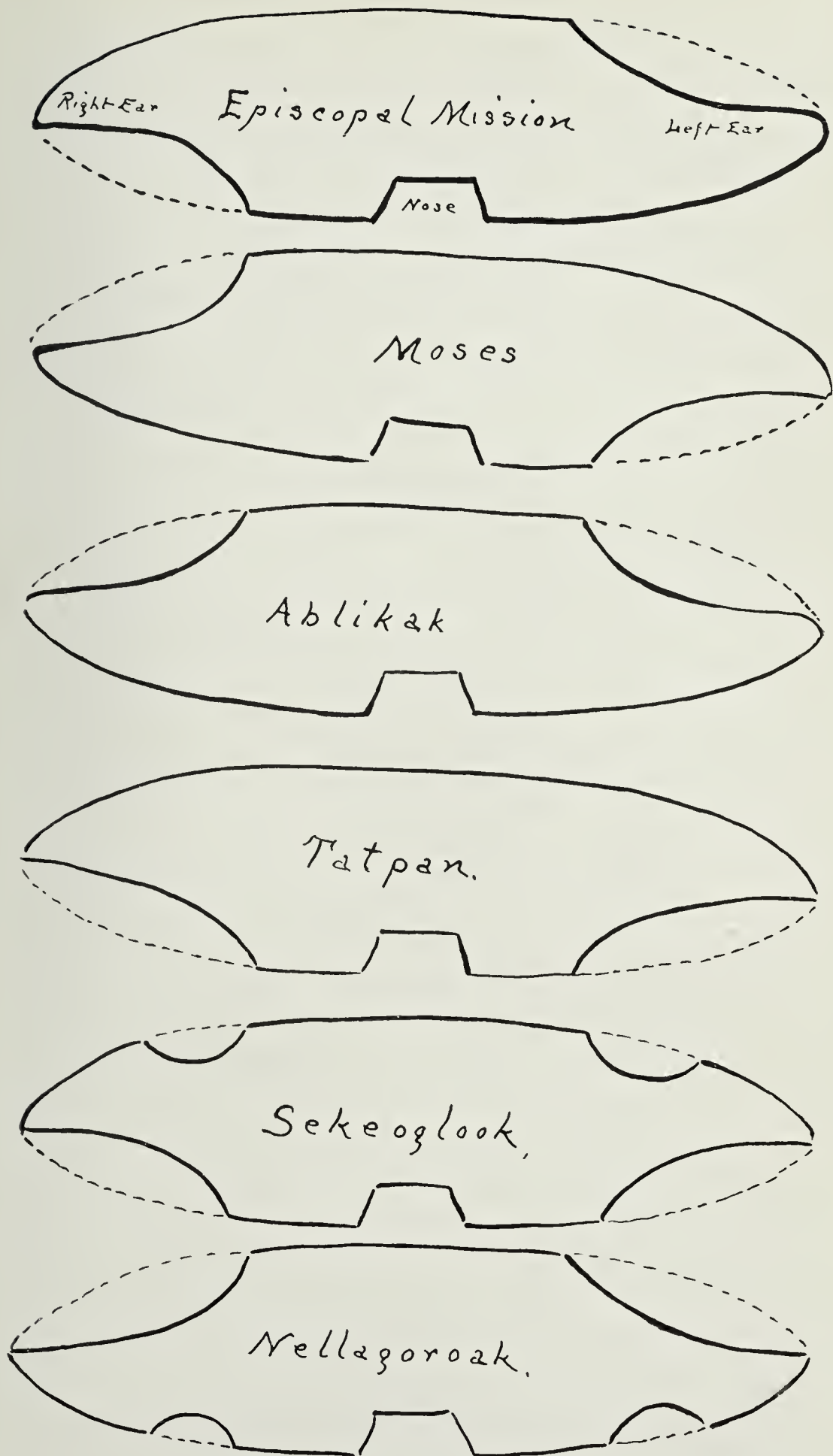
No. 42.



LIEUTENANT BERTHOLF MOUNTED ON REINDEER, SHOWING THE ABILITY OF THE REINDEER TO CARRY 210 POUNDS. Page 156.







REINDEER BRANDS ADOPTED IN ARCTIC ALASKA.

GENERAL CHART OF ALASKA AND EASTERN SIBERIA TO ACCOMPANY THE REINDEER REPORT

BY SHELDON JACKSON, LL. D.
GENERAL AGENT OF EDUCATION IN ALASKA

AND
THE SIBERIAN REINDEER REPORT
BY 1ST LIEUT. ELLSWORTH P. BERTHOLF
REVENUE CUTTER SERVICE

1901

LEGEND:

- * Reindeer Stations, Alaska.
- Overland Route (Lieut. Bertholf), Irkutsk to Ola.
- Steamer Route " " Ola to Vladivostok.
- Track of S. S. "Progress" transporting Reindeer to Alaska.



A P P E N D I X .

THE EDUCATIVE WORK AT MISSIONS.^a

By W. T. HARRIS,

United States Commissioner of Education.

* * * * *

In the district of Alaska, whose education system is under the charge of the Bureau of Education, we find the mission stations the only effective centers for any efforts looking to the elevation of the natives and their assimilation with our own. The occupations of hunting and fishing give place to a knowledge of agriculture, grazing, and the mechanical arts, and when the emigrant from the States goes to that distant region in search of gold, he finds surrounding the mission stations natives who can speak some English and who can bring for his use the resources of the land and water. Especially is this the case with the missions that are teaching the reindeer industry to the native Eskimos. We have procured, up to 1898, 550 reindeer from the neighboring coast of Siberia, and these increased to 2,000 in 1899, and with new accessions last year to 3,000. The food resource of that country is reindeer moss, and the half million square miles of this vegetable growth will support 10,000,000 reindeer and a population of 2,000,000 or 3,000,000 people, a population, say, as large as that of Finland, whose inhabitants are likewise a reindeer people.

We have had limited success with Government schools apart from mission stations, and it has not been possible to look for success in supplanting the hunting and fishing occupations by reindeer culture except in connection with those missions.

The missionary discovers the individuals that are tractable—those that show capacity for learning our industries and speaking our language. These furnish hopeful apprentices for reindeer herders and teamsters.

When we once get 10,000 deer in northwestern Alaska the annual increase will be so great that we can supply all such centers with herds, and the new migration from Finland that is now coming to America will furnish the needed teachers of herding and grazing. The prime necessity in that arctic region, namely, intercommunication in the

^a Read at the Ecumenical Conference on Foreign Missions, April 25, 1900, New York City.

arctic winter night, will be rendered possible by the reindeer express, and the worst hardships be abated. The 50,000 natives of that region will be essential to our white miners, as they are now to our salmon factories, and the work of the missionary will be more successful there than it has been with the Indian tribes of our States.

I mention Alaska and our reindeer experiment in order to give point to the suggestions I have made as to the importance of adding a full quota of secular instruction to the religious instruction furnished at our mission stations. When our converts are brought into our system of productive industry and are made partakers of our world commerce they will acquire a new sense of the meaning of our theological doctrines, which have inspired the European peoples to take possession of lands for productive industry and world commerce, uniting all in one vast effort to conquer nature for human uses. They will get a more realizing sense of the doctrine of the Holy Spirit, which unites and inspires the Christian church in all its various denominations, and through the church, the supreme earthly institution, make possible the other—the secular institutions, including the family, civil society, and the state; for all of these social combinations are possible through the surrender of mere individualism for the sake of the institutional personality of the whole.

The missionary more than other religious teachers needs to study comparative theology and learn to recognize the defects of nature religion in the inability of its devotees to conquer nature by applied science, and to combine with all nations in a peaceful interchange of products of industry and products of the mind.

ANNUAL REPORT EATON REINDEER STATION.

EATON REINDEER STATION, ALASKA,

June 30, 1901.

DEAR SIR: I have the honor to report in full as follows: Upon the arrival of the schooner *Casco*, on the 3d of July, there came on shore Messrs. Lindseth and Willard, the two men employed to give me assistance during the coming year with the work of the station. On the following day the goods for the station were landed and placed in the storehouse at the mouth of the river. Later they were freighted up in boats and placed in the storehouse at Eaton, that they might be easy of access when needed.

I employed men in July to remove one of the dwelling houses at Eaton and float it down the river and rebuild it near the storehouse at the mouth of the river, where the goods were stored. This building was afterwards used as a storehouse by the Signal Corps of the United States Army while constructing the Inalaklik-Kaltag telegraph line.

On August 4 your second visit during the summer was welcomed, while on the 7th a number of those who had been employed at the station left on their return trip home. This left us but three Lapp families, one of which was to accompany a herd to the Kuskokwim during the winter.

Two of the families, with two months' rations, had been sent in the early part of July to Cape Denbeigh to take charge of the herd, which had been driven to that point early in the spring. On the 23d of August we started with supplies for them, and upon reaching the herd we learned that several of the deer had been killed by roving men generally classed as miners. Upon returning to the station I made ready and went to St. Michael and swore out warrants for their arrest. Thinking that they would go to Nome, I took a steamer, hoping to find them there. After staying as long as I could and not being able to find them, I left the warrants in the marshal's hands and returned home. Later in the season he sent me word that one had been arrested and was in jail, but, as it was just at the close of navigation and I could not get my witnesses there, I had to let the matter drop. I was sorry, as there had been deer killed on several occasions during the summer.

In the latter part of September men were sent to Nucleet to bring the herd into the station for the winter. A storm arose while the

boat was returning with the tents and personal effects of the herders and when they tried to put in at the mouth of the Egavik River the boat was capsized, and among the clothing and other articles of more or less value which were lost was the notebook of the herder, containing items of interest pertaining to the deer.

The herd was brought along the shore and was left on the north fork of the Unalaklik River until December, when I had it moved to the south fork, both of which places were excellent feeding grounds on account of the great abundance of moss and the protection afforded by the hills and timber.

Upon the receipt of your telegram instructing me to engage two Lapps for the Nulato herd, I sent to Nome immediately and requested Mr. S. Newman Sherzer, formerly assistant superintendent, to secure two for me, also to make arrangements for their transportation to the station. No boats leaving Nome for St. Michael after he had employed them, they had to come overland, which they did, reaching here on the 23d of November.

Hearing of the heavy snows upon the portage between Eaton and the Yukon, I started across on the 11th of November, and found the condition as reported. There were from 30 to 40 inches of snow on the level. Later it rained, and then froze, which caused several inches of snow to have the same consistency as ice, making it almost impossible for deer to secure feed. I did not feel justified in starting a herd across under such conditions, but went to St. Michael to see Rev. J. M. Treca, who represented the Nulato Mission. As he was not at home, I was not able to see him, but left a letter stating how I had found matters and wishing to hear from him, that I might learn what he wished to have done.

He wrote, stating that he would see me at the station, which he did, in January. After talking the matter over he decided that it would be best to leave the herd where it was for the present, and then, later, move it to Nulato under more favorable circumstances. His letter in which he expresses this wish has already been forwarded to your office in Washington. While on the portage I met Lieutenant Grimm, with his detachment of soldiers, constructing the telegraph line from the Yukon toward the coast. I was able to accommodate him by carrying letters to the officers of the army in St. Michael.

Upon the receipt of these I received a communication from the acting assistant adjutant-general, Capt. W. P. Richardson, in which I was asked to lend the several detachments aid in case of need. I signified my willingness to do so, and on the evening of December 2 was informed that Lieutenant Smith and his detachment had united with Lieutenant Grimm and were short of supplies; that their means of transportation were inadequate to move the troops to St. Michael, and that my assistance with deer and drivers was asked for.

On the morning of the 4th I started ahead with three deer, while Mr. Lindseth was to come with thirty-two on the following day. All things worked as planned; the needed assistance was given, which brought them out of danger and to a place of safety, where they could be reached by the Government mule teams.

In the latter part of December deer were used to draw telegraph poles from the woods, while in January a train was sent to St. Michael to bring telegraphic supplies and provisions to the men who were working on the lower end of the Unalaklik-Kaltag line.

I had planned to visit the different reindeer herds in the early part of the winter, but had delayed my trip in the hope that a guide would come from the Kuskokwim bringing word from the Moravian Mission that they were ready for their herd, which would be sent from the deer at the station. I waited until the last of February, and had everything ready to start on my trip, when Mr. Henry Noreen, representing Dr. Romig, of the Moravian Mission at Bethel, came. He stated that he had come later than it had been planned, but he hoped that it was not too late to send the herd.

While I would have sent the deer earlier had he come, still I thought best to send them with him, as everything had been made ready. I advised him to return to St. Michael and make the necessary purchases preparatory to taking charge of the herd, while we counted out the deer and drove them to St. Michael.

He acted upon my advice, and we began making ready the herders and herd to start. The second day after his arrival everything was in readiness, and on the third day (February 26) the herd left for St. Michael in charge of the assistant superintendent.

Mr. Noreen's journal, which I inclose with this report, will give the particulars of their journey south. Nils Klemetsen, the freighter, whom I sent along to give the needed assistance, returned the 13th of April with the three deer which had been taken along for that purpose. He reported that the herd had reached its destination in an excellent condition, and that the herders were very well satisfied with their new home.

On the 27th of February I left home on my tour of inspection. Anxious to learn of the natural resources of the Kotzebue Sound country, and find if they were ready for deer there, I directed my course in that direction. Three days' journey brought us to the head of Norton Bay, where we struck the mouth of the Koyuk River. This river we ascended for 25 miles, when we passed over the divide to the right fork of the Buckland River. We followed this river until it unites with the left fork and forms the Buckland proper. This we followed to its mouth, then cutting across Elephant Point we crossed over Escholtz Bay and were then on the peninsula 40 miles from the mission.

We found an abundance of moss all along the way, and in many places

ideal territory for the keeping of a herd. Upon reaching the mission we found Mr. Samms, the missionary, very anxious to have something done which would relieve the starving natives. The families which I visited at the mission and for a couple of hundred miles on either side I found in very destitute circumstances, both as to food and clothing.

We left Kotzebue on the 12th of March, cutting across the ice to Cape Espenberg, on our way to Cape Prince of Wales. When within 50 miles of the cape I stopped with Commissioner Charles E. Gay, who kindly loaned one of his deer to drive to the herd of the American Missionary Association, and several apprentices, in charge of W. T. Lopp, missionary. I found this herd, as I found all the herds, suffering more or less from the want of moss, on account of the hard, crusted condition of the snow.

The native herders seemed contented and happy, and on the following day one of them drove me in to the cape.

From Cape Prince of Wales we went to Port Clarence. Learning that the Synrock herd was back in the hills 25 miles, I proceeded there with a guide, whom Reverend Brevig kindly gave me. It was my intention to go from this herd to the Agecapuk River and visit what is known as the Port Clarence herd, but after traveling two days over an unknown country a shortage of provisions compelled me to return without accomplishing my purpose.

The last herd I visited was the one belonging to the Swedish evangelical mission and apprentices at Golovin Bay. One of the native boys brought me back with a deer harnessed with a harness of two tugs instead of the one commonly used.

When I reached the Eaton herd, on the 19th of April, the deer had begun to calve.

On my entire trip I was favored with good roads and good weather. I had no hardships to contend with; true, we slept out when the mercury was lower than it ever gets at any points near the coast south of us, but we had our furs and did not mind it. I should judge that I traveled, from the time of starting until we reached home, something over 1,000 miles. I appreciated the welcome given me at all the points I visited, both by the whites and the natives. Everything was done for me that could be done. I wish to express my thanks to Reverend and Mrs. Samms, of Kotzebue; Mr. and Mrs. Lopp, of Cape Prince of Wales; Reverend and Mrs. Brevig, of Port Clarence; Mr. Sherzer and Judge Shepherd, of Nome; Reverend Hendrickson and his corps of helpers, at Golovin Bay, and Mr. W. S. Flanagan, who accompanied me.

As this is the first trip of the kind that has been made, the question might arise, Do the ends justify the means? I am convinced in my own mind that they do. In this country, where mail facilities are so poor—and even if they could be the best, the native can neither

read or write—there is need of personal attention. Many questions need to be answered, and some suggestions made in addition. Their needs for the coming year were made known. Their wrongs were looked into as much as possible. The thought that there was a personal interest taken in each native herder made them anxious to have their individual herds show up well. They look forward to the visit next year, and wanted to know if I was coming. One of the natives said upon seeing me, “We happy you come.”

For distribution this year I have had cut 100 sets of harness “trees” and a sufficient amount of sled timber, which, I trust, will be picked up by one of the cutters this summer.

During the latter part of March I had the herd of deer taken to the mountains south of Shaktolik, where they were left until the 1st of June. By that time the weather was less severe, so I had them taken to Cape Denbigh to remain for the summer. Someone is constantly with them day and night, as I can not leave them alone, on account of roving white men who are liable to shoot them, as they did on several occasions last year.

A storm of several days’ duration during the fawning season caused a loss of a number of young fawns. Still the increase this year has been fair.

I encouraged the removal of Okitkon’s and Tatpan’s herds of deer from Golovin Bay to Eaton, and am pleased to note that they are doing better since the change. Your instructions were to loan each of them 25 deer. I had reserved a sufficient number for that purpose. When I learned that they were not giving proper attention to the deer which they already had, I put off the loan until I should receive further instructions from you on the matter.

The following is a table giving the ownership and the number of deer in the herd:

Owner.	Males.	Females.	Fawns.
Government.....	{ 30 s. d. 62	} 112	78
Moses.....	{ 2 s. d. 20		
Nulato mission.....	{ 12 s. d. 50	} 50	36
Tanana mission.....	{ 50		
Golovin Bay mission.....	{ 3 s. d. 3	} 34	26
Okitkon.....	{ 4 s. d. 7		
Tatpan.....	{ 4 s. d. 12	} 29	15
Stephan.....	{ 1		
Nellagoroak.....	{ 1	} 13	10
J. T. Lindseth.....	{ 10 s. d. 10		
Capt. E. S. Walker.....	{ 1 s. d. 1	} 5	5
	{ 1		

Two male deer belonging to the Government are in the Golovin herd and one in the Synrock herd.

The following table will show the number of deer which have died during the present year:

Date.	Cause of death.	Number.	Sex.
1900.			
Aug. —	Killed by miners	10	
Aug. 15	Butchered (injured)	1	Male.
Sept. 6	Broken leg	2	Do.
Sept. 20	Internal sickness	1	Female (Martin's).
Sept. 25	Injured in fighting	1	Male.
Sept. 26	Lost in moving camp	5	
Sept. 30	Pneumonia	1	Female.
Oct. 4	Fractured skull	1	Male.
Oct. 6	Old age	1	Female.
Oct. 8	Hoof trouble	2	Male.
Nov. 5	Pneumonia	2	Female.
Nov. 6	Spinal meningitis	1	Do.
Nov. 10	Pneumonia	1	Do.
Dec. 6	Insane	1	Male.
Dec. 12	Septicemia	1	Do.
Dec. 20	Hoof trouble	1	Do.
Do.	Internal trouble	1	Female.
Dec. —	Lost (siek)	1	Male.
Dec. 22	Abscess	1	Female.
1901.			
Jan. 4	Slaughtered (lame)	1	Male.
Jan. 10	Strangled by halter	1	Do.
Feb. 12	Diarrhea	2	Do.
Apr. 13	Calving	1	Female.
May 27	do	2	Females.
June 1	Rheumatism	1	Female.
June 20	Paralysis	1	Male.
June 20	Internal sickness	1	Female.

All the wood for winter and summer use was hauled from the timber, a mile or so distant from the station, by "green" deer. In this way between thirty and thirty-five deer were broken during the winter and were made ready for the trail.

There has been an epidemic among the dogs, and hundreds have died in this vicinity. Dogs valued at from \$50 to \$150 would be well and strong one day, while on the next they would have to be killed to prevent the spreading of the disease, as when they were once affected they would bite all the dogs with which they came in contact. Martin's Lapp dog died in the summer, a trained pup in the fall, one had to be shot in the winter, six puppies died in the spring, and the ones sent to the Kuskokwim were all sick when the last word came from them. Over two hundred dogs were hauled out of Unalaklik after the snow went away. We still have enough dogs for the herd, but not enough to go out with new herds.

The list of sleds and harness at the station is as follows:

Riding sleds	13
Freighting sleds	13
Riding pulkas	3
Freighting pulkas	28
Sets of single harness	32

The natives in this vicinity have suffered very little during the past year for want of food. A good supply of dried salmon was stored in their "caches" for winter. Salmon trout, ptarmigan, and tomeod

have been very abundant in their seasons. Wild deer, during the spring, came from the heavy snows inland to the coast, and quite a number of them were killed; one moose, also, was shot within a few miles of the station. Sledding being good the natives were able to exchange their trout and deer meat for flour, etc., at St. Michael to good advantage.

I have been relieved of much of the work of the station that has formerly fallen to my lot by the valuable assistance given me by Messrs. Lindseth and Willard. Both men have been very attentive to the work devolving upon them.

At the time the natives were sick last summer I gave them my attention. Many were vaccinated—as many as I had virus with which to vaccinate them—during the time of the smallpox in Nome. The epidemic, which was a complication of measles, bronchitis, and intestinal catarrh, caused a lesser death rate here and at Unalaklik than at other points along the coast. Major Ebert, chief surgeon of Fort St. Michael, kindly furnished me with medicines for the natives when I made application. My services were required on several occasions with men who were engaged in the construction of the Unalaklik-Kaltag telegraph line.

Miners with greater or less ailments stopped to be treated. During my tour of inspection I was able to give what assistance was in my power to the natives and missions along the way. The health of the employees of the station has been very good during the whole year, only a few cases have required my attention.

Our winter this year has been very long and severe. The river froze up on the 20th of October and did not open up until the 3d of June. On several occasions the thermometer registered 38° below zero, while in February it was as low as 40°. Heavy snows in the early fall, with the formation of crusts of ice upon them, have made some locations very unfavorable to deer.

I wish to express my thanks to Rev. F. Julius Quist and Miss Selma Peterson, of the Swedish Evangelical Mission at Unalaklik, for the many services which they have from time to time rendered the employees of the station. They have made our stay in Alaska much more pleasant by their kindness and helpfulness than it otherwise would have been.

I beg leave to make the following suggestions: That the Government deer now in the vicinity of Unalaklik be left here; that a herd from Port Clarence be driven to Kotzebue Sound and placed in the hands of Robert Samms, missionary; that the general superintendent be more centrally located; that Point Hope be included in his tour of inspection; that an interpreter be taken along so that the journey may be productive of as much good as possible; that supplies be left at the different stations during the summer for this winter trip; that the deer now in the Eaton herd, and known as Moses's herd, be purchased

from the owner and placed in the hands of herders; that the Nulato herd be sent to its destination as early as possible; that the Unalaklik Valley, with the neighboring hills, be reserved to the natives with their deer.

REPORT OF SYNROCK HERD.

While I have gathered the statistics of the different herds, I have not included them in this report, for the reason that the same information will be sent you by those in charge of their respective herds. There is one exception to this, the report of the Synrock herd, which is altogether in the hands of the natives. I have the honor to include the same in this report. During the summer the herd was left on the Synrock River. At the time of the epidemic of measles, which was during the fawning season and after, the herders being all sick (Charlie Antisarlook and Achieckchick, his brother, died) the herd was practically abandoned and some of the deer wandered away and were either lost or stolen. In the middle of February the herd was moved to the Eaton River, where I found it in the latter part of March. A number of deer have been broken, some sold, and some rented out to private individuals. One hundred fawns were born in the spring of 1900. Twenty-seven young deer and 45 old deer, making in all 72 deer had died up to March 24, 1901. I found the deer in a fair condition, numbering, as near as I could count them in a body, 360. Five native boys and one native girl were in charge. They are owned as follows:

Owner.	Females.	Males.
Charlie's widow, Mary	136	136
Achieckchick's widow	30	15
Kotoak (herder 7½ months, Charlie's brother, age 21)	10	2
Sagoonuk (herder 16 months, Achieckchick's boy, age 16)	6	4
Angalook (herder 16 months, Charlie's brother, age 16)	6	3
Aseebuk (herder 16 months, age 18)	5	1
Kokenyok	5	1
Government		1

A blank book was given Angalook, in which he was shown how to keep an account of all the deer that die or are killed; he was also instructed to keep an account of all fawns born. He seemed very capable and bright, and I think he will keep as correct an account as is possible.

Kotoak informed me that one of his sled deer had been killed by a white man. I made inquiry and found that a road-house man by the name of Meyers, at the mouth of the Tishoo River, had killed it. I gathered all the facts I could, making a special trip from Nome to Teller for that purpose. I turned the report over to Mr. Brevig and asked him to do what he saw fit in the matter.

I saw Mary (Charlie's widow) on several occasions. She showed me a will that purported to be signed by her husband just before he died. I did all I could to have the will probated and an executor

appointed, but could not get her to see the need of taking action. I succeeded in getting her to come to Nome and buy provisions for herself and herders for the summer, after which she promised to close her house in Synrock and go out to her deer. I thought it best to leave the probating of her will until your arrival.

Respectfully submitted.

FRANCIS H. GAMBELL, M. D.

Dr. SHELDON JACKSON,

General Agent of Education in Alaska, Washington, D. C.

EATON REINDEER STATION, ALASKA.

May 31, 1901.

DEAR SIR: I have the honor to make the following report in regard to the school work: School began October 23 and closed April 26, during which time school was in regular session, with the exception of holiday vacations. The number of pupils enrolled during the first term was 10, 7 of whom were Eskimos, 2 Lapps, and 1 American. Gradually, as the parents moved away and the hunting seasons opened, the attendance decreased. The ages of the pupils ranged from 6 to 21 years, most of whom had attended school before, some at the station and others at the mission school at Unalaklik.

A large part of the time was taken up with conversation, in teaching the proper use of the English language. Lessons were given in reading, writing, arithmetic, spelling, geography, and drawing. The children take great interest in their school work, and it has been not an infrequent occurrence to have a boy or girl come to school without his or her breakfast. The pupil furthest advanced reads nicely in the Third Reader, and has studied arithmetic as far as common fractions.

The natives, though of a sluggish nature, are bright and very fond of music. Indeed, the children teach their parents songs that they have learned in school. Their use of English savors of the vernacular, they having acquired a good deal of it from passing prospectors. For example, upon asking a boy if he liked to come to school, I received the reply, "You bet!" This has to a certain extent been overcome and purer English taught in its place.

Respectfully submitted.

FREDERICK E. WILLARD.

Dr. SHELDON JACKSON,

General Agent of Education in Alaska, Washington, D. C.

EATON REINDEER STATION, ALASKA,

February 20, 1901.

DEAR SIR: Your letter of November 13, 1900, reached me the 14th instant (ninety-three days en route). In it I received information that Dr. Romig had turned back from his attempted trip to the sta-

tion on account of the sickness of his men. Acting on your instructions to do what I found best with the herd, I am preparing to send a herd of 50 males and 50 females, in charge of Nils Persen Bals and his son, Per, who were to go to the Kuskokwim, to Kotzebue Mission. I will send supplies with them to last until about the middle of August. There are four in the family—Nils, his wife, son, and daughter.

Mr. Flanagan, an old schoolmate of mine at Parsons College, who is very trustworthy, and who has been over the route before this winter, will go along to act as guide and to make all necessary arrangements between the two parties: Nils Klemetson will also go with them to assist them in freighting goods and supplies to their destination. He will return with Mr. Flanagan to the station. I trust that this will meet with your approval. I have acted thus for the following reasons: First, I have more men at the station than I need, and as it is your plan to supply Kotzebue Sound with deer in the near future, I thought by taking action this spring we would at least be a year ahead were we to wait for another year. Second, as there will then be but one herd left at the station belonging to the Government, it would not be necessary to continue the station work, simply retaining enough men to start with the remainder of the deer for the Koskokwim in the early part of next fall. I will have harness and sleds prepared this summer for the expected trip to the Kuskokwim, so that everything will be in readiness upon your arrival to retain or dispose of men as you see fit.

If the work at the station is to be discontinued, I think that it would be cheaper to bring supplies for eight people for six months, and if any incidentals are needed, to get them from St. Michael. There should be four competent men with the herd to the Kuskokwim, and as the Catholics will have their herders get supplies from the station until December, we will need supplies for them also—two men and one woman.

The mission at Golovin Bay found that there were 46 or 49 deer still remaining in the herd belonging to Mr. Prevost. They put them with the natives' herd and started them all this way, but they returned on the plea that the snow was too deep to continue. I have not heard direct from Mr. Hendrickson, but that is what I have heard rumored.

Hoping that I have done everything for the best and that it may meet with your approval, I remain,

Your obedient servant,

FRANCIS H. GAMBELL, M. D.

Dr. SHELDON JACKSON,

General Agent of Education in Alaska, Washington, D. C.

P. S.—Nils Bals intends to remain at Kotzebue Sound until the summer of 1902.

THE EFFICIENCY OF ESKIMO HERDERS. DR. F. H. GAMBELL, M. D.

LONE TREE, IOWA,
December 10, 1901.

DEAR SIR: In answer to your communication of December 4, relative to the efficiency of the trained native in managing a herd of deer, harnessing, driving, traveling, and caring for the same, I have the honor to report as follows:

During my trip of inspection last spring, I was able to observe the native, not only as a herder under the supervision of a white man but as an independent owner of deer. In both cases I was pleased to note their ability over that of the apprentices at Eaton who had spent but a year or two in caring for the deer. While I was convinced that the herd of deer at one point was being neglected and kept from the proper feeding grounds that the comfort of the herders might not be sacrificed, still at the very next herd I found that the natives had moved from warm homes inland and had taken up their abode in a deserted hut that their deer might feed on good moss pastures. I found that they take an interest not only in lassoing and breaking the deer, but that they are anxious as to the general outcome of their herds.

While I do not consider them, as a whole, fast travelers when left to themselves, nevertheless, when under the instruction of a white man, they give very good satisfaction in caring for a deer while on a trip.

They are very quick at making harness and sleds, and will take a great deal of pride in doing their work well.

While I do not consider them as efficient as the Laplanders, nevertheless I think that the deer would go on and increase were outside influences removed and they were left wholly in charge of the respective herds. I do not think that the rate of increase would be so great, nevertheless I have confidence in the native to such an extent that I believe he realizes what is the best way to handle a herd for him to realize the most good out of it.

In a few generations they may become as proficient as the Laplanders, but no one can tell now. I think that there should be a white man in control for a number of years, still I would not waver one iota from the original plan of "placing deer in the hands of the native."

Trusting that this is satisfactory, I remain, yours, truly,

FRANCIS H. GAMBELL.

Dr. SHELDON JACKSON,

General Agent of Education in Alaska,

Bureau of Education, Washington, D. C.

EMPLOYMENT OF N. P. BALS AND A. NILIMA.

NOME, ALASKA, *November 4, 1900.*

DEAR SIR: Your letter of October 13 was received by me on October 25, and the letters for Per Bals and Albert Nilima were delivered to them the next day. Both were willing to come to the station on your terms. I then tried to get a boat going to St. Michael, and at one time thought I had succeeded. The boat was a schooner, and it was also to take the St. Michael mail, but there was some trouble about getting the schooner, and then the wind has been so strong for the last week that it has been impossible to do anything on the water front. The *Sadie* had made her last trip to St. Michael before your letter was received. I had to finally give up the idea of getting a boat at all, and have made arrangements with a young man to take the men to Eaton with a dog team.

Mr. E. Larson is on his way to the Koskoqvim, and has agreed to take Per and Albert to Eaton for \$75 a piece or \$150.

Give my best regards to all at Unalaklik, and tell them that I shall always remember with pleasure last winter.

Yours, sincerely,

S. NEWMAN SCHERZER.

Dr. F. H. GAMBELL,

Superintendent of Eaton Reindeer Station.

DAILY JOURNAL OF EATON REINDEER STATION.

[Eaton Reindeer Station Log Book. By Frederick E. Willard.]

July 1, 1901: Temperature, 7 a. m., 64°. Warm rain. Superintendent still remains sick.

July 2: Temperature, 7 a. m., 60°. Warm and bright. The herders were given two months' rations and sent to the herd. Dr. Gambell was able to be up and went to Unalaklik with the herders.

July 3: Temperature, 7 a. m., 58°. The provision boat, schooner *Cusco*, arrived this morning. Mr. Lindseth, the assistant superintendent, came on shore this evening and went up to the station to get some of the men down.

July 4: Temperature, 7 a. m., 58°. Provisions were unloaded to-day. Mr. Frederick E. Willard, who will remain at the station this year, left the boat for land this forenoon.

July 5: Temperature, 7 a. m., 60°. All the remaining provisions were put on shore this morning. Mr. Lindseth and Mr. Willard, with two of the Lapps, went to the station.

July 6: Temperature, 7 a. m., 35°. Cloudy. A few salmon were caught to-day.

July 7: Temperature, 7 a. m., 50°. Cloudy. Some provisions were started up from Unalaklik in the *Gladys*, but the river was too low to bring her all the way up. Two miners passed up the river on their way to the Yukon.

July 8: Temperature, 7 a. m., 47°. Cloudy. One of the Lapps is sick with la grippe.

July 9: Temperature, 7 a. m., 48°. Cloudy. Mr. Lindseth with two Lapps went down to bring up freight from the *Gladys* and returned in the afternoon. Herders from Nucleet returned and reported to the superintendent. They state that having missed a deer, a search was made, and bones and pieces of meat found at a miner's camp. They seem to have been on their way to Nome. Superintendent has been busy to-day making out a report. Mr. Lindseth with some Lapps went fishing, and returned with 135 salmon in two hours.

July 10: Temperature, 7 a. m., 50°. Cloudy in the morning, clearing up in the evening. Superintendent and Mr. Lindseth with a Lapp left for St. Michael in the whaleboat this afternoon, taking the mail with them. Some Lapps are out fishing. A man can not stand around with his hands in his pockets these days or the mosquitoes will devour him.

July 11: Temperature, 7 a. m., 52°. Clear, with a brisk south wind. Some Lapps are carrying lumber to the river bank to be floated to Unalaklik.

July 12: Temperature, 7 a. m., 61°; 3 p. m. 90°. Clear. South wind. Natives have established a small fishing camp on the river near the station.

July 13: Temperature, 7 a. m., 62°. Clear. Light west wind. Anders Biti floated the lumber to Unalaklik and will build a house there for the Government use. The superintendent with his crew returned from St. Michael to-day. Mr. Frank Johansen came with them and will return next week.

July 14: Temperature, 7 a. m., 50°. Northwest wind. Rain.

July 15: Temperature, 7 a. m., 54°. Cloudy. Light northwest wind.

July 16: Temperature, 7 a. m., 55°. Cloudy in the morning and bright in the afternoon. Some fishing was done, and Mr. Lindseth, Mr. Willard, and Mr. Johansen started for St. Michael.

July 17: Temperature, 7 a. m., 48°. Cloudy, with some rain.

July 18: Temperature, 7 a. m., 50°. Cloudy and rainy. Two of the Lapps who were sent to Unalaklik to assist in building the house returned to-day.

July 19: Temperature, 7 a. m., 48°. Rained all day long. The superintendent went to Unalaklik.

July 20: Temperature, 7 a. m., 50°. Cloudy.

July 21: Temperature, 7 a. m., 55°. Bright. Those who went to

St. Michael on the 16th returned this evening, also the superintendent First case of measles among the natives.

July 22: Temperature, 7 a. m., 55°. Cloudy.

July 23: Temperature, 7 a. m., 56°. Cloudy. Superintendent was called to Unalaklik on professional duty. Some fish were caught, and preparations made for a trip to St. Michael.

July 24: Temperature, 7 a. m., 56°. Cloudy. Mr. Lindseth and Mr. Willard started for St. Michael. Dr. Gambell will join them at Unalaklik. Some Lapps went to Unalaklik.

July 25: Temperature, 7 a. m., 57°. Clear.

July 26: Clear and calm. Temperature, 7 a. m., 57°.

July 27: Temperature, 7 a. m., 55°. Calm most of the day, with some thunder and rain. Superintendent and party returned from St. Michael and walked up from Unalaklik.

July 28: Temperature, 7 a. m., 57°. Cloudy, with rain in the morning. Mr. Lindseth took a Lapp and went to Unalaklik for the whaleboat.

July 29: Temperature, 7 a. m., 55°. Cloudy all day, with mist and a little rain. Mr. Lindseth returned at 5 a. m., having left the boat about 2 miles downstream. Later the superintendent and Mr. Lindseth brought the boat to the station.

July 30: Temperature, 7 a. m., 50°. Cloudy. The superintendent and Mr. Lindseth went fishing this evening, and several salmon were caught. The river is high on account of late rains.

July 31: Temperature, 7 a. m., 50°. Cloudy, with rain at intervals. This morning was spent in putting fish on poles for station use. In the afternoon preparations were made for another trip to St. Michael, and in the evening Mr. Lindseth and Mr. Willard started for there, the superintendent going as far as Unalaklik.

August 1: Temperature, 7 a. m., 52°. Clear and calm during the day, with a strong south wind beginning at 5 o'clock. Rain squalls are frequent.

August 2: Temperature, 7 a. m., 48°. Cloudy. Rain. Strong southwest wind.

August 3: Temperature, 7 a. m., 50°. Cloudy, with occasional showers. The superintendent returned from Unalaklik and brought Rev. Julius F. Quist with him.

August 4: Temperature, 7 a. m., 50°. Overcast. Windy. The revenue cutter *Bear* anchored off Unalaklik at 11 o'clock last night, having towed the station whaleboat from St. Michael. Mr. and Mrs. Lindseth and daughter and Mr. Willard came as passengers. The steam launch, a cutter, and the station boat were brought up the river and all reached the station except the launch, which ran aground 2 miles below here and could be brought no farther. Dr. Sheldon Jackson and Dr. F. H. Gambell supervised the landing of the reindeer

hides and the loading of trade goods. A relief expedition is being started for the perishing natives. The boats all started down river this evening. The superintendent, Mr. Lindseth, and Rev. Quist went to Unalaklik.

August 5: Temperature, 7 a. m., 48°. Rained all day. The superintendent and Mr. Lindseth returned this afternoon from Unalaklik.

August 6: Temperature, 7 a. m., 50°. Clear in the morning, with rain in the evening. Most of the Laplanders turned in what Government property they had and made preparations for their trip to Norway. In the evening most of them left for Unalaklik.

August 7: Temperature, 7 a. m., 50°. Rained all day. Some Lapps came up and said that the *Bear* had returned to Unalaklik and awaited the arrival of the rest of the Lapps. Later Dr. Jackson, with the *Bear's* cutter and the whaleboat, came up and after settling accounts all left for Unalaklik. Mr. Lindseth accompanied them.

August 8: Temperature, 7 a. m., 49°. Superintendent and Mr. Willard went to Unalaklik. All the station people returned at 11 p. m.

August 9: Temperature, 7 a. m., 50°. Rain all day.

August 10: Temperature, 7 a. m., 49°. Rain most of the day. The river is getting so high that most of the fish that were drying across the river had to be brought over.

August 11: Temperature, 7 a. m., 46°. Rain all day. The deer legs brought from Siberia were spread out on the floor of the loft to dry. Mr. Lindseth made a great improvement on the sitting room by laying a tarpaulin carpet.

August 12: Temperature, 7 a. m., 50°. West wind. Rained in the morning. Clear in the afternoon.

August 13: Temperature, 7 a. m., 46°. Rained nearly all day. An epidemic of measles is raging among the natives.

August 14: Temperature, 7 a. m., 48°. Cloudy, with a few rain showers. The superintendent, Mr. Lindseth, and Ole Bahr left this evening for St. Michael. Some of the superintendent's dried salmon was stolen last night.

August 15: Temperature, 7 a. m., 46°. Cloudy, with rain most of the day.

August 16: Temperature, 7 a. m., 48°. Cloudy, with rain and a strong southwest wind in the morning. Clear and calm in the afternoon. Mr. Willard stayed up last night to watch for salmon thieves, but none appeared. Nights are getting quite dark.

August 17: Temperature, 7 a. m., 44°. Cloudy. Changing wind. Mr. Lindseth and Ole Bahr returned this evening. Superintendent is at Unalaklik. The season's record for sailing was made this trip. Time from St. Michael to Unalaklik eight and one-half hours.

August 18: Temperature, 7 a. m., 47°. Cloudy. Superintendent arrived from Unalaklik.

August 19: Temperature, 7 a. m., 50°. Clear. Light, southwest breeze.

August 20: Temperature, 7 a. m., 50°. Warm, partially overcast. Light, west wind. Dr. Gambell, Mr. Lindseth, Mr. Willard, and the Lapp went to Unalaklik and brought up the whaleboat. With them, in another boat, came Rev. Quist, Rev. Forsell, Miss Selma Peterson, Dr. Johnson, and Mr. Forsberg. The visitors will remain over night.

August 21: Temperature, 7 a. m., 48°. Clear. South wind in forenoon, calm in afternoon. The visitors left this morning for Unalaklik. The boat was repaired and rations issued to be sent to the herders at Nucleet.

August 22: Temperature, 7 a. m., 39°. Cool and overcast. Northeast wind. The superintendent, Mr. Lindseth, and Ole Bahr started for Nucleet.

August 23: Temperature, 7 a. m., 48°. Warm, bright day. Light, northeast wind.

August 24: Temperature, 7 a. m., 44°. Overcast, with showers in the evening and a light wind from the south.

August 25: Temperature, 7 a. m., 54°. A native brought the mail up from Unalaklik.

August 26: Temperature, 7 a. m., 52°. Light, northeast wind. A fine day. Several natives from the fishing camp came over to spend the Sunday afternoon looking at magazines.

August 27: Temperature, 7 a. m., 40°. East wind. Rain in the afternoon.

August 28: Temperature, 7 a. m., 44°. Strong, east wind. Rained hard all day. The river is rising again.

August 29: Temperature, 7 a. m., 47°. Cloudy, with a few showers during the day. This evening we were surprised by the unexpected arrival of Ole Bahr. He states that two deer were shot by men who afterwards went to Nome. The superintendent, Mr. Lindseth, and Ole Bahr then started back and were nearly drowned in a severe storm, but got to Unalaklik. From there Dr. Gambell, Mr. Lindseth, Mr. Quist, and a native will start for St. Michael; from there Dr. Gambell will go to Nome.

August 30: Temperature, 7 a. m., 50°. Partially overcast. The natives, who have dwelt so peacefully across the stream and whose canine followers have troubled us so much, are moving up the river.

August 31: Temperature, 7 a. m., 49°. Rained nearly all day.

September 1: Temperature, 7 a. m., 49°. West wind. Rained in the morning, but turned out to be a fine day. In the afternoon Mr. Lindseth returned from St. Michael, bringing with him Private Johnson from the barracks, who will stay overnight.

September 2: Temperature, 7 a. m., 48°. Southwest wind with rain most of the day. Mr. Willard and Mr. Johnson went to Unalaklik to attend church services.

September 3: Temperature, 7 a. m., 50°. Strong north wind all day, accompanied by rain squalls. Mr. Willard returned from Unalaklik this evening rather wet from a swim in the river.

September 4: Temperature, 7 a. m., 50°. South wind with much rain. Ole Bahr and Mr. Willard went to Unalaklik with the mail.

September 5: Temperature, 7 a. m., 49°. Southwest wind. Overcast, with a little rain. Those who went to Unalaklik yesterday returned to-day.

September 6: Temperature, 7 a. m., 48°. Bright day, clouding up in the evening.

September 7: Temperature, 7 a. m., 46°. Overcast. A bedroom is being partitioned off from the dining room.

September 8: Temperature, 7 a. m., 48°. Rain nearly all day. Wood was brought to the station for fall use.

September 9: Temperature, 7 a. m., 46°. Bright in the morning. Light southwest breeze. Showers toward evening.

September 10: Temperature, 7 a. m., 40°. Clear. Southwest wind. Rain in the evening. Mr. and Mrs. Lindseth and daughter went to Unalaklik and returned in the evening. Three boat loads of natives, bound up the river, stopped at the station to trade.

September 11: Temperature, 7 a. m., 38°. West wind. Fine day. A little snow has fallen on the mountain tops. Mr. Ivanoff and two natives came up from Unalaklik and returned later.

September 12: Temperature, 7 a. m., 47°. East wind with frequent showers during the day.

September 13: Temperature, 7 a. m., 48°. South wind. Clear in the morning. Rain squalls in the afternoon and evening. Some wood was brought from up the river. The river is rising rapidly.

September 14: Temperature, 7 a. m., 50°. Rain all day.

September 15: Temperature, 7 a. m., 47°. Strong south wind. Clear and cool. Few showers in the evening. More snow has fallen on the mountains. Some natives stopped this evening on their way up the river and say that the superintendent is at Unalaklik.

September 16: Temperature, 7 a. m., 48°. Strong southwest wind. Trees are blown over by the wind.

September 17: Temperature, 7 a. m., 38°. Light southwest breeze and fog in the morning. Clear and cool in the evening. Superintendent Dr. F. H. Gambell returned this evening from Nome.

September 18: Temperature, 7 a. m., 32°. Cool, calm, and cloudy. Mr. Lindseth, the Lapp, and a native started for Nucleet. Superintendent went to Unalaklik.

September 19: Temperature, 7 a. m., 29°; 8 a. m., 37°. Heavy frost last night. Fine day, with a very light breeze from the south. A native came up from Unalaklik this evening with a note from the superintendent, saying that he would go to Nucleet and Mr. Lindseth to St. Michael.

September 20: Temperature, 7 a. m., 30°. Northeast wind; cloudy. The superintendent and a native arrived unexpectedly this afternoon. Having gone 20 miles up the coast, it was decided that the Lapps should walk the remaining distance, as the whaleboat was leaking too much to go any farther.

September 21: Temperature, 7 a. m., 39°. East by northeast wind; cloudy. Some repairs were made upon the storehouse roof.

September 22: Temperature, 7 a. m., 38°. Clear and calm. A most beautiful day. Dr. Gambell and Mr. Willard went to Unalaklik this morning.

September 23: Temperature, 7 a. m., 32°. East wind; cloudy. This evening the superintendent, Mr. Lindseth, Mr. Willard, Nils Klemetsen, Isak Bango and wife walked up from Unalaklik and brought the mail.

September 24: Temperature, 7 a. m., 43°. Southeast wind. Cloudy in the morning and raining in the afternoon. Mr. Lindseth and two Lapps left this morning for Nucleet.

September 25: Temperature, 7 a. m., 44°. Calm, with occasional showers.

September 26: Temperature, 7 a. m., 40°. Northwest wind; overcast. A new trail was cut through the brush below the station for winter travel.

September 27: Temperature, 7 a. m., 32°. Northwest wind. We awoke this morning to find a little snow on the ground. Snow fell irregularly during the day.

September 28: Temperature, 7 a. m., 30°. Very light north wind. A little snow fell this morning, but went off during the day. Superintendent walked to Unalaklik.

September 29: Temperature, 7 a. m., 33°. Clear and calm. Some natives came up from the mission this morning.

September 30: Temperature, 7 a. m., 32°. Strong southeast wind; fair. Two miners, on their way to Yukon, stopped at the station to repair their boat. This evening Mr. Lindseth, Ole Bahr, and Nils Klemetsen arrived. The herd is between here and Unalaklik. Mr. Lindseth, in charge of the sloop *Gladys*, with the Lapp women and their belongings as passengers and cargo, was shipwrecked off the mouth of Egavik River. Passengers and crew were saved and half the cargo recovered.

October 1: Temperature, 7 a. m., 42°. Rained all last night and part of to-day. Cloudy. The snow has gone off the mountains. Wind changed from southeast to southwest. Mr. Lindseth and the Lapps went to Unalaklik this morning and brought the Lapps' provisions, etc., up to North River. From there Mr. Lindseth and Nils Klemetsen came up to the station.

October 2: Temperature, 7 a. m., 36°. Northeast wind. Mr. Lind-

seth and the Lapp went to the station to bring up provisions. The Lapp women were expected up, but got only to North River. From there Marit Bals came to the station. Private B. C. Moore, of the Signal Corps, walked up from Unalaklik and will stay overnight. Later in the evening Mr. Lindseth and two Lapps arrived; with them came Mr. Frank Sanders, who has the new trading store at Unalaklik. He will remain overnight.

October 3: Temperature, 7 a. m., 44°. East wind. The two visitors, Mr. Lindseth, and some Lapps left this morning for Unalaklik. Mr. Willard started for a visit to the herd.

October 4: Temperature, 7 a. m., 42°. East wind. This afternoon Mr. Willard, Isak Bango, and Mrs. Bals came in from the herd. Ole Bahr walked up from Unalaklik.

October 5: Temperature, 7 a. m., 40°. Overcast; light east wind. Ole Bahr and Isak Bango walked to Unalaklik this morning. In the evening Dr. Gambell, his friend Mr. Flanagan, Mr. Lindseth, and the Lapps came up from Unalaklik with the whaleboat. Per Spein came in from the herd.

October 6: Temperature, 7 a. m., 39°. Clear and calm. Per Spein, Isak Bango, Mrs. and Marit Bals left for the herd. Mr. Flanagan has moved into a Lapp house and will remain at the station all winter. Some wood was brought from up river.

October 7: Temperature, 7 a. m., 40°. Overcast and calm, with rain in the evening. Mr. Lindseth, Mr. Willard, and two Lapps started this afternoon for Unalaklik. Isak Bango will go with them from the herd.

October 8: Temperature, 7 a. m., 40°. Overcast and calm, with rain during the day. The superintendent and Mr. Flanagan went shooting and brought in six ptarmigan. In the afternoon Martin, Nellagoroak, and a young native came up to the station. Those who went to Unalaklik returned with a boat load of goods.

October 9: Temperature, 7 a. m., 43°. West wind; overcast. The superintendent, Mr. Lindseth, Mr. Flanagan, Martin, and the Lapps went to Unalaklik. Nellagoroak went up river to see his wife.

October 10: Temperature, 7 a. m., 37°. Overcast, with showers during the day. Those who went to Unalaklik returned to-day with the exception of Martin. Some Yukon Indians stopped on their way to Unalaklik.

October 11: Temperature, 7 a. m., 34°. West wind; overcast. Snowed during the night. Continued flurries to-day. Superintendent, Mr. Lindseth, Mr. Flanagan, Ole Bahr, and Nils Klemetsen went to Unalaklik in the whaleboat to fish tomeod. Mr. Rock, a native, came up from Unalaklik and returned in his kyak with some necessary articles for building a schooner.

October 12: Temperature, 7 a. m., 30°. Strong east wind, develop-

ing into a snowstorm toward evening. Indians passed up river. Nellagoroak came in to-day to get his rations.

October 13: Temperature, 7 a. m., 28°. Strong east wind. This evening Dr. Gambell, Private Moore, Mr. Flanagan, and Ole Bahr came up from Unalaklik. They had stopped at the herd and learned that Nils Bals, the herder, had killed a caribou that had strayed into the deer herd. Mr. Lindseth and Nils Klemetsen stopped at the herder's camp and will come up to-morrow. The whaleboat was left at Unalaklik on account of the storm. Superintendent brought up the mail.

October 14: Temperature, 7 a. m., 28°. Calm; clear. Ice was seen floating down the river. Mr. Lindseth and Nils came into town this forenoon.

October 15: Temperature, 7 a. m., 26°. Overcast and calm. Two Lapps took Nellagoroak to herd with his provisions and returned with Mrs. Spein. Private Moore returned to Unalaklik. Some natives came down river and will take up their abode in their winter houses near the station. Ice is floating on the river.

October 16: Temperature, 7 a. m., 12°. Clear and calm. Not a cloud in the sky. This morning Dr. Gambell and Mr. Flanagan started into the hills on a caribou hunt. The river is frozen along its edges. Ice has been floating down all day. Several boat loads of natives passed down river.

October 17: Temperature, 7 a. m., 4°. Overcast and calm. Sawed wood all day and said nothing. Dr. Gambell and Mr. Flanagan returned this evening.

October 18: Temperature, 7 a. m., 4°. Clear; fine day; light southwest breeze. Per Spein came in from the herd. The river blocked up and broke again several times.

October 19: Temperature, 7 a. m., 2°. Fair; west wind. Per Spein and his wife returned to herd. The river froze up during the night.

October 20: Temperature, 7 a. m., 5°. Fair; light, changing wind. Dr. Gambell was called to Unalaklik and left this afternoon.

October 21: Temperature, 7 a. m., -2°. Clear; light east wind. This is the first morning this fall that the temperature has fallen below zero. Mr. Frank Sanders, Lieut. R. S. Offley, and a native came up from Unalaklik by dog team and returned this afternoon. The sick man at Unalaklik died. Mr. Willard went on an errand to the herd and returned in the evening.

October 22: Temperature, 7 a. m., 5°. Cloudy; very strong east wind. Dr. Gambell returned in the afternoon. Snow began falling in the evening.

October 23: Temperature, 7 a. m., 21°. Light southeast wind. Two inches of snow fell during the night. Nils Bals brought his daughter Marit in from the herd and he returned in the afternoon. School began to-day. Two natives came up from Unalaklik with a dog team.

October 24: Temperature, 7 a. m., 31°. West wind. Snowed all day. Rations were issued for the Lapps. Superintendent made a visit to the herd. Several deer have died.

October 25: Temperature, 7 a. m., 26°. Light southwest wind, with a little snow. This evening Mr. Sanders came up with a dog team from Unalaklik and returned later. George Valteau arrived with the mail from St. Michael. With him came an Indian who is going up to Nulato. Two deer were brought in from the herd to-day by Per Spein and Nellagoroak. Mrs. Spein came with them.

October 26: Temperature, 7 a. m., 27°. Light west wind. Mr. Valteau and the Indian went up the river with the mail this morning. Lieut. R. S. Offley, who is in command of a detachment of soldiers detailed to build a telegraph line up the valley, came up to the station this morning. In the afternoon the superintendent drove him over to his camp with deer. Superintendent returned in the evening.

October 27: Temperature, 7 a. m., 16°. Cloudy; changing wind. Snowed part of to-day. Sleds were repaired.

October 28: Temperature, 7 a. m., -8°. Cloudy; east wind, with some snow. The superintendent and Mr. Lindseth went to the herd this morning and returned in the afternoon. Mr. Sanders came up with his dog team and returned to Unalaklik.

October 29: Temperature, 7 a. m., 8°. Cloudy; east wind. A new trail was cut to the herd. Some deer were brought in this evening. Two Indians from Tanana stopped with their dog team on their way to Unalaklik. They brought word that there was 5 feet of snow on the summit of the Portage. Martin came up and returned to Unalaklik. Mr. Flanagan walked to Unalaklik.

October 30: Temperature, 7 a. m., 10°. Clear and calm. The deer were used hauling wood to-day. David, a native, came up from Unalaklik with a dog team. The soldiers have moved camp to a grove a mile above the station, and to-day several of them passed to and from work.

October 31: Temperature, 7 a. m., -10°. Cloudy; light east wind, with a little snow in the afternoon. Mr. Valteau, the mail carrier, came back and stopped at the station an hour or two, then proceeded to Unalaklik. Four miners with dog teams passed up river from Nome en route to the Kuskokwim River, where is said to be a discovery of gold. The Tanana Indians passed up river. More wood was hauled to-day. Mrs. Spein visited at the station a few hours.

November 1: Temperature, 7 a. m., 24°. East wind. Overcast. Dr. Gambell walked to Unalaklik and returned in the afternoon. Per Spein came in and returned. Wind changed to southwest, with rain in the evening.

November 2: Temperature, 7 a. m., 26°. West wind, with snow in the afternoon. Isak Bango took the deer to the herd.

November 3: Temperature, 7 a. m., 12° . Changing wind, with snow falling all day. Isak Bango returned from the herd. Some soldiers visited for a short while to-day. Harness making the order of the day.

November 4: Temperature, 7 a. m., 16° . East wind. Overcast. Nils Bals came in from the herd.

November 5: Temperature, 7 a. m., 3° . Clear and calm. Nils Bals returned to the herd. Nils Klemetsen and Isak Bango took deer to Unalaklik for fish.

November 6: Temperature, 7 a. m., -9° . Clear, with east wind. Those who went to Unalaklik yesterday returned to-day with fish.

November 7: Temperature, 7 a. m., -24° ; 6 a. m., -27° . Cloudy and calm.

November 8: Temperature, 7 a. m., -8° . East wind. Soldiers moved their camp 8 miles farther up the river. Isak Bango and Mrs. Bals went to the herd, and from there Isak Bango and Per Spein will go to Nucleet for harnesses, etc.

November 9: Temperature, 7 a. m., 6° . Strong east wind, with snow all day. Harnesses are being made. Native dog teams are passing.

November 10: Cloudy. Southwest wind, with snow in the afternoon. Mr. Willard went to Unalaklik. Mrs. Spein came in from the herd. Mr. Sanders arrived with mail from St. Michael, and after getting the mail for Nome returned to Unalaklik. He has taken the contract of hauling mail to Nome this winter. Later Mr. Corbusier arrived and will remain over night. At 6 p. m. Mr. N. V. Hendricks arrived with mail from Nulato. He will proceed in the morning.

November 11: Temperature, 7 a. m., 30° . Northeast wind, with snow and rain all day. Those who stopped last night went on to-day. Dr. Gambell started over the portage with a load of mail. Several native dog teams passed. Mr. Willard returned from Unalaklik.

November 12: Temperature, 7 a. m., 35° . Calm. Drizzling rain all day.

November 13: Temperature, 7 a. m., 34° . Cloudy. East wind, with rain. The ice on the river is covered with water.

November 14: Temperature, 7 a. m., 34° . Cloudy. East wind.

November 15: Temperature, 7 a. m., 28° . Calm. Slightly clouded sky. Isak Bango and Per Spein returned, having gone as far as Egavik.

November 16: Temperature, 7 a. m., 17° . Clear. East wind. Mr. Willard skated to Unalaklik. At 5 p. m. five soldiers arrived from their camp and will stay at the station over night. Their mules were fed on oatmeal.

November 17: Temperature, 7 a. m., 18° . Clear. Northeast wind. A beautiful day. The soldiers went on to Unalaklik. At 2 p. m. a soldier arrived from Unalaklik and secured two deer sleds to haul provisions. With these and his loads he started for the camp, 8 miles

above, having been two days out from Unalaklik. Last night he turned his mules out to "rustle." Mr. Willard returned from Unalaklik.

November 18: Temperature, 7 a. m., 17°. Clear. East wind. The first sergeant and a private from Lieutenant Offley's camp came down to investigate the trail for hauling provisions. They returned in the afternoon. Per Spein came in and returned to the herd. Isak Bango made a short visit at the herd.

November 19: Temperature, 7 a. m., 30°. Cloudy. Rained last night and this morning, making a coating of ice over the ground. Very bad for deer pasturage. Strong east wind. At 11 a. m. the superintendent arrived from over the portage. A native accompanied him. Superintendent immediately left with mail for St. Michael. The ground and snow were too slippery for the deer to travel safely, so dogs were used.

November 20: Temperature, 7 a. m., 34°. Cloudy. East wind. Lieutenant Offley, with 30 soldiers, mules, and sleighs, passed the station on the march to Unalaklik. A few soldiers were left to guard the camp. News was received that Lieutenant Smith is bringing his detachment down from Kaltag and is short of rations. Some moss was gathered. Miss Peterson, accompanied by natives, drove up from the mission and will pay the station a few days' visit. Three Yukon Indians passed up river.

November 21: Temperature, 7 a. m., 18°. East wind. Cloudy all day. Clear in the evening. Lieutenant Offley drove up from Unalaklik with a dog team and stopped a short time at the station. He is going up to meet Lieutenant Smith. Per Spein and Nellagoroak came in for their rations.

November 22: Temperature, 7 a. m., 8°. Clear. Strong east wind. A mule team passed on the way to Unalaklik.

November 23: Temperature, 7 a. m., 10°. Clear. Light east wind. Five dog teams passed down the river from the Yukon en route to St. Michael. A double mule team went up the river. Per Bals and Alfred Nilima arrived to-day from Nome.

November 24: Temperature, 7 a. m., 0°. Clear and calm. One mule team went up river. Rev. J. F. Quist drove up from the mission and after a short call he and Miss Petersen returned to Unalaklik. Per Bals went to the herd.

November 25: Temperature, 7 a. m., 3°. Clear and calm during the day. Light northeast wind sprang up in the evening. Six dog teams passed up river. Nils Bals and wife, Nellagoroak, and Per Bals came in from the herd.

November 26: Temperature, 7 a. m., -3°. Clear and calm. The Lapps picked moss. In the afternoon Messrs. Blanck and Smith arrived from Nome with the Laplanders' baggage. Mr. Lindseth went with

them to Unalaklik this evening. Nils Bals and Nellagoroak returned to the herd.

November 27: Temperature, 7 a. m., -12° . Cloudy, with changing wind. Dr. Gambell returned from St. Michael at 8 a. m. Mr. Hendricks and the mail carrier stopped for the mail and then started in for Kaltag. Mr. Lindseth came up from Unalaklik. Sergeant Gornell, with 8 men and 8 mules, stopped on his way up river to relieve Lieutenant Smith. Two soldiers from Unalaklik visited a short while and stated that the detachment at Unalaklik would start for St. Michael to-morrow. Per Spein and his wife came in from the herd and brought with them the carcass of a deer.

November 28: Temperature, 7 a. m., 16° . Light southwest wind, with snow all day. Snowed a little during the night. Three men from Nome stopped a short time on their way to the Kuskokwim. Mr. E. L. Blanck took with him a letter from the superintendent to Dr. Romig at Bethel Mission. In the afternoon a native came up from Unalaklik with a dog team. He and Mr. Flanagan took the mail and started for Nome. A corral is being made. It will afford protection for the deer when they are brought to the station.

November 29: Temperature, 7 a. m., -15° . Light east wind. The superintendent, Mr. Lindseth, wife, and daughter, and Mr. Willard, went to the mission to spend the day. The ladies were drawn by a team of three dogs, which were bedecked with rosettes and tassels. This is Thanksgiving Day.

November 30: Temperature, 7 a. m., -24° . Clear. Light east wind. Those who went to Unalaklik yesterday returned this afternoon.

December 1: Temperature, 7 a. m., -16° . Cloudy and calm. Snowed a little to-day. In the afternoon a man came in from Nome, en route to the Kuskokwim. He brought a request from Captain Jarvis to help move some provisions from Unalaklik to Anvak. Arrangements were made to send Nils Klemetsen with six deer to freight the stuff to the summit of the mountains east of Gaolsovia. The prospector took the requisite number of pulkas to Unalaklik, and a start is to be made on the 3d instant.

December 2: Temperature, 7 a. m., 0° . Overcast and calm. Mr. Woolford, the mail carrier, stopped on his way to St. Michael. In the evening Lieut. R. S. Offley with three men came from up river with a mule team. The lieutenant requested that deer be sent to rescue the snow-bound and suffering detachments of Lieutenants Smith and Grimm. Starvation stares them in the face, and they have no means of transportation, as the snow is too deep for the mules to work. Dr. Gambell went to Unalaklik to cancel arrangements for Captain Jarvis.

December 3: Temperature, 7 a. m., -14° . Clear and calm. The superintendent returned from Unalaklik this morning. Preparations are made for a start with deer to-morrow.

December 4: Temperature, 7 a. m., -16° . Clear, with light east wind. Temperature, 3 p. m., -27° . Dr. Gambell and Nils Klemetsen with four deer started for the soldiers' camp at the portage at 7.30 a. m. On account of the great depth of snow and the layers of ice pasturage can not be found for the deer farther than the Old Womans Mountain, which is 30 miles from here and halfway between here and the camp. Mr. Lindseth will start to-morrow with more drivers and deer. The mail arrived from Nome and left again for that place. Maj. Frank Green, from St. Michael, is in Unalaklik. Mr. Willard walked to Unalaklik this afternoon and returned again in the evening.

December 5: Temperature, 7 a. m., -14° . Overcast. East wind, with a little snow in the evening. Mr. Lindseth hoped to make an early start, but owing to indisposition of the Lapps they did not get away until 1.30 p. m. Mr. Lindseth took 30 deer and 3 drivers, with 29 pulkas and 1 sleigh. He intends to get to the Old Womans Mountain during the night. Sergeant Stanley passed up the river with a dog team.

December 6: Temperature, 7 a. m., 7° . Clear and calm. Mr. Kimball, from St. Michael, came up with the mail carrier from St. Michael, and after picking up the mail went on over the portage. Mr. Flanagan came up from Unalaklik. At 2 p. m. Lieutenant Offley came up from Unalaklik, and requested of Mr. Willard that he send a driver and two deer up the river to bring Dr. Mitchell to Unalaklik for a soldier who is sick with typhoid pneumonia. Word was sent to the herd, and at 8.30 p. m. Per Spein and the lieutenant set off with two deer. Mrs. Bahr gave birth to a son at 8 p. m.

December 7: Temperature, 7 a. m., 2° . Clear. East wind. In the afternoon Lieutenant Offley arrived. Per Spein got in with the doctor and all went to Unalaklik. Per Spein returned this evening. Nellagarook and Ole Bahr worked on the deer corral.

December 8: Temperature, 7 a. m., -8° . Strong east wind. Per Spein returned to camp with Nellagarook.

December 9: Temperature, 7 a. m., 9° . Strong east wind. Cloudy. Nils Bals and Per Spein came in from the herd and report one sick deer.

December 10: Temperature, 7 a. m., 10° . East wind. Nils Bals returned to camp. Mr. Willard and Per Spein went to the mountains to examine the sick deer.

December 11: Temperature, 7 a. m., 20° . East wind. In the morning 24 soldiers, mostly from Lieutenant Grimm's detachment, passed on their way to Unalaklik. At 1.15 p. m., Supt. F. H. Gambell returned with 3 deer, and was followed in the course of the afternoon by 14 deer and 2 drivers. Two more soldiers stopped on their way to Unalaklik. They went on this afternoon.

December 12: Temperature, 7 a. m., 19° . East wind. Mr. Lind-

seth with 20 deer and 2 drivers returned at 11 a. m. One deer had broken away, but is now with the herd. Dr. Gambell and Mr. Flanagan went to Unalaklik. One soldier from Lieutenant Smith's detachment will remain over night. Three soldiers passed at midnight.

December 13: Temperature, 7 a. m., 19° . Southeast breeze. Dr. Gambell and Mr. Flanagan returned from Unalaklik and report that two men have been carried to sea on the ice and perished. The soldier went on to Unalaklik.

December 14: Temperature, 7 a. m., 21° . Light southeast wind. In the forenoon Lieutenants Smith and Grimm, with Lieutenant Smith's detachment, passed the station on their way to Unalaklik. At noon Major Greene came from Unalaklik with a dog team and returned after a few hours' visit.

December 15: Temperature, 7 a. m., 10° . East wind. Three dog teams from Tanana stopped for a few minutes at 7.30 a. m., and then went on toward St. Michael. Mr. Corbusier arrived with the mail from Tanana at 9 a. m., and soon after went to Unalaklik. Mr. Kimball and the mail carrier from Kaltag stopped a few minutes on their way to Unalaklik. The superintendent went to Unalaklik and returned in the evening.

December 16: Temperature, 7 a. m., 15° . East wind. Reverend Koonce, of St. Michael, came up to visit the station, and will stay a few days. Mail arrives from St. Michael, and the carrier will stop over night at the station.

December 17: Temperature, 7 a. m., 12° . East wind, with a little snow. Mail went on. One deer strangled himself, and the carcass was brought to the station.

December 18: Temperature, 7 a. m., 9° . East wind, with snow. Mail arrived from Nome and started on return trip. The herd was driven past the station and across the river. Dr. Gambell and Reverend Koonce went to Unalaklik. Mr. Koonce will go on to St. Michael.

December 19: Temperature, 7 a. m., 0° . Clear and calm. Dr. Gambell returned at 7 a. m. Lieutenant Grimm passed up river to continue building the telegraph line as far as the Old Womans Mountain. The carcass of one deer was brought in.

December 20: Temperature, 7 a. m., -10° . Clear and calm. Mail arrived from Nome. The superintendent went to Unalaklik and returned in the evening.

December 21: Temperature, 7 a. m., -4° . Clear and calm. The carrier from Nome awaits the mail from the Yukon.

December 22: Temperature, 7 a. m., 4° . Overcast and calm.

December 23: Overcast. East wind. Mail arrived from the Yukon.

December 24: Temperature, 7 a. m., 2° . Cloudy. East wind. Mail for Nome left this morning; also for St. Michael. Maj. Frank Greene passed up river.

December 25: Temperature, 7 a. m., 6°. Cloudy. East wind. Hail-storm in the evening. Mail from St. Michael arrived at noon, and the carrier will wait over till to-morrow. Mr. Willard and Mr. Flanagan went to Unalaklik.

December 26: Temperature, 7 a. m., 20°. East wind. Mr. Willard returned from Unalaklik. Several natives with dog teams came up from Unalaklik and with them a mad dog, which bit one of the Laplanders and a station dog. The two dogs were shot. Dr. Gambell dressed the Laplander's wound.

December 27: Temperature, 7 a. m., 17°. West wind during the day, changing to the east in the evening. Rev. F. J. Quist, Miss Petersen, and some natives came up from Unalaklik for a Christmas time visit. Mr. Flanagan returned from Unalaklik. We had a little Christmas gathering this evening and the guests were entertained by candy making, games, and musical selections rendered by Mr. W. S. Flanagan.

December 28: Temperature, 7 a. m., 12°. Strong east wind with snow. Our visitors returned to Unalaklik this morning.

December 30: Temperature, 7 a. m., 31°. Southwest wind. Cloudy. Seven men with three dog teams passed by on their way to the Kuskokwim.

December 31: Temperature, 7 a. m., 28°. East wind, with a heavy snowstorm in the afternoon and evening. Mr. Flanagan and Mr. Willard went to Unalaklik. From there Mr. Flanagan will start in the afternoon with the mail for Kotzebue Sound. Preparations were made to-day for a trip to Norton Bay, and twelve deer were brought in from the herd.

January 1, 1901: Temperature, 7 a. m., 30°. Cloudy. East wind. Superintendent with two Lapps and 12 deer left at 5.30 a. m. for Norton Bay. Mr. Willard returned from Unalaklik. Three men with dog teams passed here on their way to the Yukon. The first mail from the States arrived at 11.55 p. m. and was gladly welcomed.

January 2: Temperature, 7 a. m. 34°. East wind, with snow and rain in the afternoon. Mail from St. Michael for the States passed in the morning.

January 3: Temperature, 7 a. m., 28°. East wind; cloudy.

January 4: Temperature, 7 a. m., 10°. Clear; light east wind. Three dog teams and one horse went by the station, driven by stampedeers to the Kuskokwim.

January 5: Temperature, 7 a. m., -10°. Clear with light east wind. Superintendent returned from Norton Bay this evening. Later the Lapps returned with the loaded deer.

January 6: Temperature, 7 a. m., 8°. Clear; calm. One mule team passed up river.

January 7: Temperature, 7 a. m., 4°. Cloudy, with snow in the afternoon and evening. East wind. Lieutenant Grimm stopped at

the station during the afternoon, and in the evening was driven to Unalaklik with deer. One mule team passed down river.

January 8: Temperature, 7 a. m., 15° . Clear; calm. Mr. Lindseth took his wife out for a deer drive. Corpl. John A. Kress walked up from Unalaklik and will remain overnight. Another mad dog was shot after, having bitten two of the station dogs. One of the Kuskokwim gold prospectors returned and stated that there was no gold on the Kuskokwim, but that the strike was on the Nushagak River.

January 9: Temperature, 7 a. m., -12° . Clear and calm. Mail passed the station to and from St. Michael. Mr. Lindseth with two Lapps started for St. Michael with deer.

January 10: Temperature, 7 a. m., -10° . East wind. Bright, beautiful day.

January 11: Temperature, 7 a. m., -20° . Clear and calm. Mrs. Lindseth and her daughter went to Unalaklik to spend a few days.

January 12: Temperature, 7 a. m., -38° . Clear and calm. The Lapps are breaking deer. Corporal Kress came up from Unalaklik and will remain overnight.

January 13: Temperature, 7 a. m., -38° . Clear, with a very light east wind. Mrs. Lindseth returned this afternoon from her visit at Unalaklik. Two mails from Nome, one leaving Christmas day and the other January 3, came in this evening at 4 o'clock.

January 14: Temperature, 7 a. m., -33° . Clear and calm.

January 15: Temperature, 7 a. m., -30° . Clear; calm in the forenoon, with a light east wind in the afternoon. Two mule teams bound for Unalaklik passed to-day.

January 16: Temperature, 7 a. m., -25° . Clear; east wind. A man with a mule passed up river.

January 17: Temperature, 7 a. m., -21° . Clear, with a strong east wind. The mail passed to and from St. Michael. Mail left for Nome. More "mushers" to the Kuskokwim passed to-day.

January 18: Temperature, 7 a. m., -18° . Two men came up from Unalaklik and returned. The superintendent went to Unalaklik. Strong east wind. Clear.

January 19: Temperature, 7 a. m., -18° . Cloudy; wind from the east increased in velocity during the day, and at night a real blizzard set in. Superintendent returned from Unalaklik.

January 20: Temperature, 7 a. m., -5° . East wind; cloudy. Mr. Lindseth returned this morning from St. Michael. The other men are expected to-morrow.

January 21: Temperature, 7 a. m., -10° . Calm and cloudy in the morning, with a west wind in the afternoon. Clear in the evening. Five men, pulling their own sleds, passed en route for the Kuskokwim. Mr. Lindseth went to Unalaklik and returned in the evening. Lapps got in from St. Michael. One mule team passed toward Unalaklik. Two dog teams for the Kuskokwim passed.

January 22: Temperature, 7 a. m., -18° . Cloudy; east wind. Mr. Lindseth made a trip to Unalakik. Superintendent visited the herd. Two dog teams from the Kuskokwim passed, and their drivers say there is no gold there. Six dog teams, with seven men and one lady, stopped for a short while, en route for the Kuskokwim, with the motto: "Make or break;" probably both.

January 23: Temperature, 7 a. m., -22° . Clear. Light east wind. One mule team passed up river. Lieutenant Grimm came up from Unalakik and will remain overnight. Three men bound for the Kuskokwim came up and will stop here to-night.

January 24: Temperature, 7 a. m., -28° . Clear and calm. Lieutenant Grimm proceeded on his way up river. One disabled deer was brought in to the station and killed.

January 25: Temperature, 7 a. m., -24° . Clear; east wind. Mail arrived from St. Michael and the carrier will stop overnight here awaiting the Yukon mail. Two travelers came up from Unalakik and brought a rumor that Mr. McKinley was reelected. Nothing definite, however. Dr. Gambell went to Unalakik.

January 26: Temperature, 7 a. m., -30° ; 9 p. m., -39° . Light wind from the northwest. Dr. Gambell returned from Unalakik, bringing a man with a frozen foot with him for treatment. Martin and Nellagaroak left this evening for St. Michael with eight deer. Mr. Willard went to Unalakik.

January 27: Temperature, 7 a. m., -38° . Light southeast wind. "Outside" mail arrived. Father Treca, from St. Michael, visited at the station and returned to Unalakik. Mr. Willard returned from Unalakik. In the evening Lieutenant Grimm with two mule teams stopped at the station, and Dr. Gambell went with him to Unalakik on professional duty.

January 28: Temperature, 7 a. m., -32° . Light east wind; clouded up a little toward evening. Dr. Gambell returned from Unalakik. Lieutenant Grimm with two mule teams passed up river. The superintendent with one Lapp started this evening for St. Michael with deer.

January 29: Temperature, 7 a. m., -3° . Cloudy; east wind with snow. Two mule teams passed to-day, also one man pulling his own sled, en route to the Kuskokwim.

January 30: Temperature, 7 a. m., -4° . East wind with snow. Quite a storm in the evening. Two natives from the mission called for the doctor.

January 31: Temperature, 7 a. m., 2° . Light west wind. Snowed all day.

February 1: Temperature, 7 a. m., -12° . Clear; northeast wind; overcast in the evening. Two natives came up from Unalakik with a note from Mr. Flanagan stating that he had returned from Kotzebue Sound on January 30. Mr. Willard went to Unalakik.

February 2: Temperature, 7 a. m., 26°. Blizzard from the east. Dr. Gambell and the Lapps returned from St. Michael. Mr. Flanagan and Mr. Willard came up from Unalaklik with a team of seven dogs. Several miners are stopping here.

February 3: Temperature, 7 a. m., 37°. Warm and cloudy; west wind. Snowed in the afternoon. Mail from St. Michael will stop overnight here.

February 4: Temperature, 7 a. m., 24°. East wind. Snowed all day and started to rain in the evening.

February 5: Temperature, 7 a. m., 35°. Rained all last night. Changing wind to-day, with snow. Lieut. Otto B. Grimm came down to the station and will remain overnight.

February 6: Temperature, 7 a. m., 34°. Lieutenant Grimm left at 12.30 p. m. The superintendent started with two deer for the mail tent. Mr. Willard left for the Old Womans Mountain.

February 7: Temperature, 7 a. m., 20°. Light snow. Two Lapps started for a strayed deer, but having found his tracks leading toward the herd, they came back to the station. Nellagarook came in from the herd and reported that he and Martin had returned yesterday.

February 8: Temperature, 7 a. m., 2°. Superintendent returned at noon, having gone no farther than Old Womans Mountain.

February 9: Temperature, 7 a. m., 8°. Clear. Nine teams of Eskimos passed up the river bound for the feast at Nulato. Mr. Flanagan came down from the telegraph line, where he has been working, with a sore hand. Some provisions were freighted up from Unalaklik.

February 10: Temperature, 7 a. m., -14°. West wind. Mr. Lindseth went up to the second village with two deer. Sydney A. Judd was brought to the station with frozen feet, that he might receive treatment. The outside mail, long overdue on account of heavy snows, passed by this evening. The post-office has been removed to Unalaklik.

February 11: Temperature, 7 a. m. -36°. Mr. Lindseth returned this afternoon.

February 12: Temperature, 7 a. m., -20°. Very still. The superintendent went to Unalaklik and returned at noon with goods from the warehouse below. Mr. Lindseth left to freight goods for Joe Burns. Nils Bals came in from the herd to get supplies.

February 13: Temperature, 7 a. m. -35°. Calm and frosty. Thermometer registered -20° all day long. Another outside mail. Two soldiers with a mule passed down the river to-day. Rations were issued. Some young deer that have been broken were sent to the herd and green deer brought in in their place.

February 14: Temperature, 7 a. m., -24°. Lieutenant Offley reached Unalaklik last night with forage and provisions from St. Michael. To-day two of his teams went up river to get tents, etc.,

but had to return on account of deep snow. Dr. Gambell ran to Unalaklik, on an emergency case in one hour and six minutes. The distance is 8 miles. Messrs. Lindseth and Willard returned to-day.

February 15: Temperature, 7 a. m., -28° . Clear and calm. Mr. S. Newman Sherzer, formerly assistant superintendent, came up to the station, having brought the mail from Nome to Unalaklik. The mail from St. Michael passed to-day. A moose was killed south of the station, the first one in many years.

February 16: Temperature, 7 a. m., -18° ; noon -1° . East wind. Mr. Quist and Miss Peterson made a short visit to the station.

February 17: Temperature, 7 a. m., -40° . Mr. Sherzer left for Unalaklik this evening; will leave for Nome to-morrow.

February 18: Temperature, 7 a. m., 5° . Dr. Gambell went to Unalaklik and returned this afternoon. Mail from the Yukon arrived to-day. Ole Bahr drove down with a deer to Unalaklik and got the mail.

February 19: Temperature, 7 a. m., 12° . Strong east wind; cloudy.

February 20: Temperature, 7 a. m., 14° . Nils Bals and wife came in from the herd.

February 21: Temperature, 7 a. m., 18° . Work began on the corral, which is to be used for dividing the herd of deer. Dr. Gambell left for the Old Womans Mountain. Mr. Lindseth and Ole Bahr went to Unalaklik for provisions. Mr. Lindseth returned in the evening, bringing Rev. Kounce, of St. Michael with him.

February 22: Temperature, 7 a. m., 10° . Dr. Gambell returned this afternoon.

February 23: Temperature, 7 a. m., 4° . Still and cloudy. Mr. Noreen, representing the Bethel Mission, came for the herd of deer which had been waiting to be sent to the Kuskokwim since early last fall. Although the season is late we will endeavor to make as early a start as possible so that the herd will reach its destination before the fawning season begins.

February 24: Temperature, 7 a. m., 10° . Beautiful day. Many of the natives who went to Nulato returned to-day.

February 25: Temperature, 7 a. m., 8° . Bright and sunshiny. Mr. Quist, Miss Peterson, Miss Alice Omigitchoak, and Stephen Ivanoff visited the station and witnessed the division of the herd. One hundred and seventy-six deer were selected to be sent to the Kuskokwim. We hope to be able to leave in the morning. The mail from the Yukon passed. Rev. Kounce left for St. Michael.

February 26: Temperature, 7 a. m., -2° . Light west wind. Nils Bals, wife, son, and daughter, and Nils Klemetsen started with the herd for Bethel. Mr. Lindseth accompanied them as far as St. Michael. The superintendent and Mr. Flanagan started this evening with the mail for Kotzebue Sound. From there they expect to proceed to

Cape Prince of Wales and return along the coast, inspecting the reindeer herds.

February 27: Temperature, 7 a. m., -4° . Light east wind. Some prospecting is being done on one of the creeks near the station.

February 28: Temperature, 7 a. m., -4° . Cloudy, with a little snow in the afternoon. Clear in the evening.

March 1: Temperature, 7 a. m., -12° . Clear and calm. Those who were prospecting near here had to stop on account of the water. Mail from the outside passed. Mr. Willard went to Unalaklik and returned with the mail.

March 2: Temperature, 7 a. m., -21° . Clear and calm. Hans Samuelsen, who has been working on the portage, came down from the Old Woman with two deer.

March 3: Temperature, 7 a. m., -6° . Light changing wind; clear.

March 4: Temperature, 7 a. m., -0° . East wind; clear. Six mules passed up river. Corporal Burnett stopped at the station for medical treatment. He will remain overnight.

March 5: Temperature, 7 a. m., -2° . Clear; east wind; barometer falling. Six mules, hauling provisions to the soldiers' camp, passed.

March 6: Temperature, 7 a. m., 9° . Light east wind. Snowed all day. Natives passing from Nulato state that food is scarce on the Yukon. Mules will be hauling provisions for several weeks to come.

March 7: Temperature, 7 a. m., 9° . Light wind with irregular fall of snow. Mr. Lindseth returned from St. Michael. The new snow is 5 inches deep.

March 8: Temperature, 7 a. m., 8° . East wind with a little snow. Lapps are hauling wood. Mail from the Yukon passed.

March 9: Temperature, 7 a. m., 3° . Clear and calm. Joe Burns passed up river with a dog team. Rumor of gold found on the river.

March 10: Temperature, 7 a. m., 2° . Clear; light east wind. Mr. Lindseth went up the river to investigate concerning the report of the gold discovery, but found nothing of importance. Mail for the States passed to-day.

March 11: Temperature, 7 a. m., -18° . Clear; light southwest breeze. Mr. Willard and Ole Bahr freighted goods from Unalaklik with deer. Dr. Mitchell (U. S. A.) and Capt. E. S. Walker stopped a few minutes on their way to the Yukon.

March 12: Temperature, 7 a. m., -22° . Clear and calm; a bright, beautiful day. This bright weather is having its effect on the natives, for they are getting brown again. Mr. Lindseth took his wife for a drive to the deer herd to-day. Our herd at present consists of 366 deer.

March 13: Temperature, 7 a. m., -9° . Clear; light east wind. Lieut. O. B. Grimm stopped at the station a few minutes on his way up river. This afternoon Mr. Quist and Stephan came up and later returned to Unalaklik. The outside mail got in and will stay over night.

March 14: Temperature, 7 a. m., -3° . Clear; light east wind. The herd was driven to the corral and some deer marked. This afternoon Mr. Willard went to Unalaklik for the mail.

March 15: Temperature, 7 a. m., -0° . East wind; cloudy. Mail going out passed to-day.

March 16: Temperature, 7 a. m., 6° . East wind with a few clouds. Mr. Frank Sanders paid a short visit to the station.

March 17: Temperature, 7 a. m., 8° ; noon, 28° . Calm; partly cloudy. Mr. and Mrs. Lindseth took a deer drive to-day. Nellagaroak Per Spein and wife spent a few hours at the station.

March 18: Temperature, 7 a. m., 9° . Clear and calm. The herders' camp was moved to the station to-day in preparation for the move to Nucleet. Alfred Nilima went to Unalaklik this morning and returned at noon.

March 19: Temperature, 7 a. m., 2° . Clear and calm. Five dog teams passed to-day. Mr. Willard drove to Unalaklik and returned in the evening.

March 20: Temperature, 7 a. m., 20° . Clear and bright in the morning, but overcast in the afternoon; light wind changing from west to east. Mr. Willard drove to the soldiers' camp on the Quickslabluff River and returned in the evening. A detachment of soldiers with mule teams passed en route for the Old Woman's Mountain. They expect to build the telegraph line from there to Kaltag. Work is being done on the line between St. Michael and Unalaklik. Mail from the States passed this evening.

March 21: Temperature, 7 a. m., 23° ; 2 p. m., 38° . Clear; light east wind. Mr. and Mrs. Lindseth drove to Unalaklik this afternoon. A few "pussy-willows" found to-day, herald the coming of spring.

March 22: Temperature, 7 a. m., 10° . Clear and calm. Mr. Lindseth made two trips to Unalaklik to-day with deer. He bought three Seattle papers at Unalaklik, the latest was the Post Intelligencer, dated December 26, 1900.

March 23: Temperature, 7 a. m., 12° . Light west wind. Sergt. Fred Sanford, who has been dangerously ill with blood poisoning, was brought down from Kaltag by dog team. He will leave Unalaklik for St. Michael in a few days. Mr. Nilson, from Golovin Bay, came up from Unalaklik and returned with a deer that has been kept with our herd. The Golovin Bay missionaries arrived in Unalaklik yesterday with deer. Mr. Willard made a trip to Unalaklik.

March 24: Temperature, 7 a. m., 28° . Overcast; southwest wind. Two dog teams passed to-day; in one party was a woman from Circle City. Mr. F. G. Kimball spent a few hours at the station. Mail from St. Michael passed. Private Moore came up from Unalaklik.

March 25: Temperature, 7 a. m., 18° . West wind; snowed all day. Per Spein and wife, Isak Bango and wife, Nellagaroak, wife and child, started with the herd for Nucleet. Three deer remain at the station.

Mr. Lindseth, Ole Bahr and wife, accompanied them as far as Unalaklik.

March 26: Temperature, 7 a. m., 10° . Clear and calm; a beautiful day. Ole Bahr took three deer to Unalaklik and brought up Mr. Quist and Miss Petersen; Miss Johnson and Mr. Andersen, of Golovin Bay, who have been visiting at Unalaklik, also came up with deer. All returned in the evening, having paid a very pleasant visit. Several dog teams passed the station, bound for the Yukon. Private Moore went to Unalaklik.

March 27: Temperature, 7 a. m., 18° . East wind, with snow, all day. Several Yukon Indians passed toward Unalaklik. They say that the natives on the Yukon are starving. Two men came down river with a mule, and will stay at the station overnight.

March 28: Temperature, 7 a. m., -2° . Light west wind; clear. Mail from the States passed. One young native brought in three caribou that he had killed in the mountains. Mr. Willard went for the mail.

March 29: Temperature, 7 a. m., -4° . Clear; calm. One dog team passed. Mr. and Mrs. Lindseth and Ole Bahr took a trip to Unalaklik. Hans Samuelsen returned from Old Woman, where he has been building a cabin.

March 30: Temperature, 7 a. m., -4° . Clear; west wind in the morning; north wind in the afternoon. Eight dog teams from the Yukon passed for St. Michael. Most of the travelers were Indians. Two stray mules were caught in front of the station and turned loose later. Hans Samuelsen went to Unalaklik and returned in the afternoon.

March 31: Temperature, 7 a. m., -8° . Clear, with a changing breeze. Major Greene passed up river. Mail from St. Michael passed. A Lapp pup went crazy and had to be shot. A mule driver came down hunting for the two mules that passed yesterday. He will remain here overnight.

April 1: Temperature, 7 a. m., 12° . Strong west wind; rain and snow. The mule driver went to Unalaklik. Very severe storm.

April 2: Temperature, 7 a. m., 18° . West wind, with a little snow; cleared off during the day. Several Indians passed up river.

April 3: Temperature, 7 a. m., -0° . Clear and calm. Mr. Lindseth and Hans Samuelsen drove to Unalaklik. Alfred Nilma returned with seven deer from Nucleet. He brings news that the deer could not be kept at Nucleet on account of there being too much ice on the ground. Messrs. Beasley and Hansen walked up from Unalaklik and will remain here overnight and go on to Old Woman Mountain to-morrow. Later, Dr. Mitchel, U. S. Army, with two representatives of the mail service, arrived with their dog teams and will also remain overnight. News was received by wire at Unalaklik to-day

that Private Watson had been killed by a snowslide at Old Woman Mountain.

April 4: Temperature, 7 a. m., -2° . Clear and calm. Those who were here last night left this morning. Mrs. Hastings, Mrs. Hatch, Miss Petersen, Mr. Stephan Ivanoff and wife, and Mr. Richmond came up from Unalaklik and visited the station a few hours. Mrs. Hastings and Mrs. Dr. Hatch, who came from St. Michael, were brought up from Unalaklik with deer. Two mails from the States passed to-day. The corpse from Old Woman Mountain passed, en route to St. Michael for interment. Ole Bahr and Hans Samuelsen left for Old Woman Mountain with deer. Mr. Willard went to Unalaklik and will return to-night with the mail.

April 5: Temperature, 7 a. m., 4° . Clear and calm. Mr. Willard returned this morning at 1.30 a. m. Nine dog teams, with double the number of Indians, passed with provisions for Nulato. Ole Bahr and Hans Samuelsen returned. Privates Vaden and Krafts, operators at the Unalaklik cable station, walked up and paid the station a few hours' visit.

April 6: Temperature, 7 a. m., -0° . Clear and calm. Mail from St. Michael passed to-day. Dr. Mitchel spent a few minutes at the station on his way to the telegraph construction camp.

April 7: Clear and calm; a most beautiful Easter morning. Mr. Willard went to Unalaklik and returned. As Easter lilies are scarce, the aurora borealis was substituted as the attraction of the evening.

April 8: Temperature, 7 a. m., -6° . Clear, with a light north wind. Mr. and Mrs. Lindseth started for the herd, which is now located near Shaktolik. Alfred Nilima left for St. Michael with deer. Hans Samuelsen left for Nome.

April 9: Temperature, 7 a. m., -8° . Cloudy, with a light east wind and a little snow toward evening. Two dog teams passed for the Yukon; two dog teams passed toward Unalaklik.

April 10: Temperature, 7 a. m., -12° . Clear most of the day with occasional snow flurries and a west wind. Two men pulling their own sled, from Rampart City, passed to-day en route for Nome. Mr. and Mrs. Lindseth came home from the herd. The first fawn of the season was born to-day. Two mule teams passed up river.

April 11: Temperature, 7 a. m., -6° . Cloudy and bright by turns; changing winds.

April 12: Temperature, 7 a. m., -4° . Clear; very bright; light southwest breeze. Alfred Nilima returned from St. Michael and is snow blind. Mr. Willard went to Unalaklik and returned in the evening. Mr. W. S. Flanagan, who has been traveling with Dr. Gambell, arrived in Unalaklik from Nome to-day. He will come up to the station to-morrow. The superintendent is looked for at any time.

April 13: Temperature, 7 a. m., 0°. Clear; light west wind. Four dog teams from the Yukon passed to-day. Mr. Flanagan came up from Unalaklik to-day and returned. He expects to go to St. Michael. Nils Klemetsen returned from the Kuskokwim, having had eight days travel from Bethel. He states that on his way down the guide took them past Bethel, which caused them eight days of unnecessary travel, the guide having followed the wrong course. On his return trip Nils took his course northwest until about 35 miles this side of Andreafski, and from that point he traveled north northwest at the foot of the mountain range, keeping the mountains from 5 to 8 miles on his right, until he sighted the St. Michael Mountain. From there he followed the canal to St. Michael. The country is flat and there is an abundance of moss all the way.

April 14: Temperature, 7 a. m., 8°. Light east wind. Mr. and Mrs. Lindseth and child, Ole Bahr, wife, and children, Mr. Willard, Nils Klemetsen, and Alfred Nilima drove to church with deer. The mail from the States, four days overdue, passed to-day.

April 15: Temperature, 7 a. m., 20°. Cloudy; east wind. Mr. Quist came up from Unalaklik and took photographs. He returned in the evening. Mr. N. V. Hendricks and Mr. Brown passed up river to-day. They called at the station a short time.

April 16: Temperature, 7 a. m., 20°. Cloudy; west wind with a little snow. Native dog teams passed the station.

April 17: Temperature, 7 a. m., 18°. Cloudy; west wind. Mr. and Mrs. Lindseth drove to Unalaklik and returned in the evening. Mail from St. Michael passed to-day.

April 18: Temperature, 7 a. m., 24°. Cloudy; west breeze, changing to an east wind, with a heavy snow in the evening. Mr. Lindseth and Alfred Nilima took all the remaining deer at the station and started for the herd. Mr. Corbusier, en route to Anvik, will stop at one of the cabins overnight. Two more travelers from Dawson will stop overnight.

April 19: Temperature, 7 a. m., 20°. Blizzard from the northwest. Two travelers from Dawson got in and will wait over till to-morrow.

April 20: Temperature, 7 a. m., 10°. Clear and calm. The travelers went on their several ways. Mr. Willard went to Unalaklik. Mr. Lindseth returned with three deer late to-night, and brings news that the superintendent, Dr. F. H. Gambell, is in Unalaklik.

April 21: Temperature, 7 a. m., 1°. Clear and calm. The superintendent returned to-day from his tour of inspection. Mr. Willard returned from Unalaklik.

April 22: Temperature, 7 a. m., 12°. Clear and calm. Mail from the States passed this forenoon. Four men with a dog team en route from Seattle to Nome passed to-day. They left Seattle on February 24, and bring news of the death of ex-President Harrison, and other

matters of interest. Rev. Quist, Rev. Koonce, and Miss Petersen came up from Unalaklik with a dog team and returned in the evening.

April 23: Temperature, 7 a. m., 28°. Clear; light, warm east wind. The snow is thawing a little.

April 24: Temperature, 7 a. m., 30°. Clear; light east wind; maximum temperature, 3 p. m., 49°. Superintendent and Ole Bahr left this evening for St. Michael with deer.

April 25: Temperature, 7 a. m., 26°. Clear; light east wind; thawing steadily.

April 26: Temperature, 7 a. m., 24°. Clear and calm all day, clouding a little toward night. Miss Petersen and a native woman walked up from Unalaklik and arrived here at 5 a. m., and left again at 9 a. m. Mr. Lindseth and Nils Klemetsen made a trip to Unalaklik. Mr. Willard dismissed school to-day for a month's vacation. Some of the natives living near the station have gone to the mountains to catch squirrels.

April 27: Temperature, 7 a. m., 28°. West wind; cloudy, with snow in the evening. Dr. Gambell returned from St. Michael at noon, having left there yesterday at 4 p. m.

April 28: Temperature, 7 a. m., 30°. Light west wind. Snowed nearly all day.

April 29: Temperature, 7 a. m., 20°. West wind. Snowed last night and all day to-day. Ole Bahr went up river with deer to get sleigh timber. One traveler from the Yukon got in to-day.

April 30: Temperature, 7 a. m., 18°. West wind. Snowed last night and all day to-day. The traveler stopped over to-day on account of storm. Work was done on the station books.

May 1: Temperature, 7 a. m., 10°. Clear; west wind. Books are being straightened.

May 2: Temperature, 7 a. m., 20°. Clear in the morning, with west wind; snow in the evening. Mr. Blatchford arrived from the Yukon en route to Nome, and will leave here to-morrow on his way. Nils Klemetsen started with three deer for the herd.

May 3: Temperature, 7 a. m., 30°. Clear; east wind. Two men with six Government mules arrived from over the portage at midnight, and left for Unalaklik again at 10 a. m. Mail from St. Michael arrived to-day. Mr. Blatchford left for Nome. Word was received that the United States telegraph line is connected between Unalaklik and Kaltag.

May 4: Temperature, 7 a. m., 31°. Clear and bright with a very light east wind. Mr. Lindseth went to Unalikalak in the morning and returned in the afternoon, and later started for St. Michael with dogs. Several dog teams passed to-day.

May 5: Temperature, 7 a. m., 31°. Clear and bright with a very light east wind. Nils Klemetsen and Isak Bango came in from the herd with two deer. Outside mail passed. Two white swans were seen

to-day, the first waterfowl of the season. Mr. Cahill passed with a dog team, taking as passenger Sergeant Wahl, who will relieve Sergeant Busch at the Old Womans Mountain signal house.

May 6: Temperature, 7 a. m., 26°. Clear and calm. Travelers from the Yukon arrived at 4 p. m. and will stop with the natives a few days. Several dog teams passed the station. Superintendent went to Unalaklik. Isak Bango, with two deer, left for the herd.

May 7: Temperature, 7 a. m., 1°. Clear in the morning, turning cloudy in the afternoon; nearly all day a low mist hid the mountains from sight; east wind. Superintendent returned from Unalaklik. Lapps have been making pulkas.

May 8: Temperature, 7 a. m., 18°. Fair. The first robin was seen to-day. The natives are in the hills squirrel hunting.

May 9: Temperature, 7 a. m., 18°. Cloudy; east wind. Mr. Lindseth returned from St. Michael. David brought a native girl up from the mission with a dog team. He returned in the afternoon. One native passed toward Unalaklik hauling his kyak on a sled.

May 10: Temperature, 7 a. m., 23°. Clear and calm. A native came up with a telegram for Dr. Gambell from Unalaklik, and returned in the afternoon.

May 11: Temperature, 7 a. m., 19°. Clear and calm. Mail from the States passed this evening. Mr. Willard went to Unalaklik and returned with the station mail.

May 12: Temperature, 7 a. m., 24°. Fair; calm. One traveler from the Yukon passed to-day.

May 13: Temperature, 7 a. m., 24°. Fair; calm. Mr. Lindseth and Ole Bahr started for the hills, intending to do a little prospecting. Rev. Quist, Miss Petersen, and a native boy came up from Unalaklik with a dog team and visited during the afternoon. They returned in the evening.

May 14: Temperature, 7 a. m., 17°. Foggy; light west wind.

May 15: Temperature, 7 a. m., 25°. Clear; light, changing wind. The two prospectors came home this evening.

May 16: Temperature, 7 a. m., 22°. Clear. The last mail that will go up the river arrived this morning and went on in the evening.

May 17: Temperature, 7 a. m., 23°. Cloudy; west wind.

May 18: Temperature, 7 a. m., 26°. Cloudy. Superintendent went to Unalaklik and returned this afternoon. Yukon mail passed last night. The mail from the States was held at Tanana.

May 19: Temperature, 7 a. m., 28°; noon, 47°. East wind in the morning, changing to west in the afternoon. Water appeared on the river ice to-day. Native squirrel hunters have returned.

May 20: Temperature, 7 a. m., 26°. Cloudy; calm. Thawing steadily all day. Mr. and Mrs. Ivanoff and two children and David came up from Unalaklik. Mrs. Ivanoff and children will remain over-

night. Dr. Gambell, Mr. Ivanoff, and David started off on a goose hunt. Mr. Lindseth and Ole Bahr went to Unalaklik.

May 21: Temperature, 7 a. m., 28°. Cloudy, with a fog in the evening. Mr. Lindseth and Ole Bahr returned.

May 22: Temperature, 7 a. m., 29°. Cloudy; snowed during the night. Those who went goose hunting returned. Mr. Ivanoff and family and David went to Unalaklik.

May 23: Temperature, 7 a. m., 26°. Clear; south wind. Water 2 feet in depth covers the ice on the river.

May 24: Temperature, 7 a. m., 38°. Clear; east wind, changing to south in the afternoon. Two ducks were shot in front of the station to-day.

May 25: Temperature, 7 a. m., 28°. Cloudy; west wind.

May 26: Temperature, 7 a. m., 26°. Overcast; light southwest wind.

May 27: Temperature, 7 a. m., 33°. Overcast, with snow in the afternoon; foggy in the evening.

May 28: Temperature, 7 a. m., 35°. Cloudy; west wind. Ice on the river shows signs of breaking.

May 29: Temperature, 7 a. m., 33°. Overcast; west wind. One inch of snow fell this evening. Dr. Gambell and Nils Klemetsen started for Unalaklik in the small river boat. River broke a little to-day, but there is not enough water to float the ice.

May 30: Temperature, 7 a. m., 20°. Overcast; north wind, with snow.

May 31: Temperature, 7 a. m., 28°. Clear. Mr. Lindseth and a boat's crew went down as far as South River to see if anything had happened to the superintendent, but finding evidences of his having gotten that far in safety, the party returned during the night.

June 1: Temperature, 7 a. m., 23°. Clear. Dr. Gambell returned to-day. He states that he learned that the deer had not been moved according to instructions, so he walked out to find the reason why. They plead "not enough men," so he left Nils to assist them and returned. The deer were doing well, but he wanted them taken across Shaktolik River before the ice broke. He states that the storm on the night of the 29th of May was so severe that as they were walking to the herd he froze both of his ears.

June 2: Temperature, 7 a. m., 28°. Cloudy.

June 3: Temperature, 7 a. m., 34°. Cloudy.

June 4: Temperature, 7 a. m., 35°. Overcast; light snow in the morning. River broke in part to-day and the ice jammed in the bend below the station.

June 5: Temperature, 7 a. m., 34°. Cloudy; little snow in the evening. Some natives returned from squirrel hunting and came across the river on the ice.

June 6: Temperature, 7 a. m., 33°. Cloudy and misty.

June 7: Temperature, 7 a. m., 34°. Cloudy; snowed during the night; snow and rain during the day. Nils Klemetsen returned to-day and stated that the whole herd had been moved to Nucleet. One fawn died on the way.

June 8: Temperature, 7 a. m., 35°. Rained during the night and drizzled all day. Ice floated down the river to-day.

June 9: Temperature, 7 a. m., 36°. Overcast; calm. Some natives came down from the upper village in boats and will stay near the station until they can get to Unalaklik.

June 10: Temperature, 7 a. m., 36°. Clear and warm during the day, clouding up in the evening. The mouth of the river is blocked with ice.

June 11: Temperature, 7 a. m., 34°. Misty.

June 12: Temperature, 7 a. m., 32°. Cloudy. The superintendent went to Unalaklik to invoice the Government goods in the warehouse.

June 13: Temperature, 7 a. m., 36°. Clear.

June 14: Temperature, 7 a. m., 50°. Clear. Natives from the station moved to Unalaklik for the sealing season. The ice went out of the mouth of the river. Mosquitoes.

June 15: Temperature, 7 a. m., 50°. Clear. Temperature, noon, 63°.

June 16: Temperature, 7 a. m., 52°. Clear. Spring flowers resembling the *pedicularis* family in bloom.

June 17: Temperature, 7 a. m., 50°. Light showers. Superintendent returned from Unalaklik.

June 18: Temperature, 7 a. m., 48°. Cloudy, with rain. Mr. Sanders, trader at Unalaklik, with two of his friends, came up from Unalaklik intending to go to Kaltag, but the water is too high for traveling, so he returned in the evening. Mr. Willard accompanied them.

June 19: Temperature, 7 a. m., 48°. Cloudy. Serosky stopped at the station for the night and continued on his way to Unalaklik this morning. Tatpan came in from the herd and reported everything favorable. The ocean ice is gradually moving from shore. Nils and Ole were sent up the river to-day to cut timber for a hundred sleds.

June 20: Temperature, 7 a. m., 45°. Raining most of the day. A native came up from Unalaklik and stated that a steamer and three sailing vessels are lying outside the ice. The west wind blew the ice in to shore again. Dr. Gambell and Mr. Lindseth went to Unalaklik to repair the whaleboat.

June 21: Temperature, 7 a. m., 49°. Cloudy.

June 22: Temperature, 7 a. m., 45°. The river is falling. The superintendent, assistant, and Mr. Willard returned this evening. The west wind is keeping the ice near shore.

June 23: Temperature, 7 a. m., 50°; noon, 62°. Cloudy.

June 24: Temperature, 7 a. m., 45°. Rainy. Ole and Nils returned with timber for a hundred sleds.

June 25: Temperature, 7 a. m., 49°. South wind blowing and the ice is receding. The sled timber and harness wood was taken down.

June 27: Temperature, 7 a. m., 54°. Cloudy, with light, changing wind; showers in the evening.

June 28: Temperature, 7 a. m., 45°; 9 a. m., 41°. Overcast; thick mist, with rain in the morning. The small river steamer *City of Bradford*, Captain Cahill, came up to the station to-day. It is the first steamer that has come this far up the river. Mr. Willard went to Unalaklik on the steamboat.

June 29: Temperature, 7 a. m., 40°. Light west wind, with occasional showers. Mr. Lindseth, Mr. Willard, and the two Lapps returned this evening from Unalaklik. The steamer *Sadie*, from San Francisco, came into the mouth of the Unalaklik River at midnight of the 25th instant and brought the first news of the outside. She will remain at Unalaklik until the ocean permits her to leave. The ice is so close to shore that boats can not get to St. Michael. The first mail reached Nome on May 23. Dr. Gambell started to walk to St. Michael. Rations were issued for the Lapps.

June 30: Temperature, 7 a. m., 50°. Clear; brisk southwest wind.

ANNUAL REPORT MORAVIAN REINDEER STATIONS.

BETHEL, ALASKA, *February 4, 1901.*

DR. FRANCIS H. GAMBELL, .

Superintendent Eaton Reindeer Station, Eaton, Alaska.

DEAR DOCTOR: I send with this a party for the reindeer herd for Bethel. Mr. Henry Noreen, who has this, is in charge of the party. I am very sorry we could not send sooner, but hope the present season will be soon enough to get the herd to this place before they fawn. I have written to the A. C. Co., at St. Michael; to honor any bills of necessary expense incurred by this expedition. May I ask you to fit the party out with what supplies they need to return on and send the bill in to the A. C. Co., at St. Michael. Charge Moravian Mission, Bethel, Alaska, with the bill of your expenses. I prefer that you would use your judgment in outfitting this party rather than they should draw "ad lib." Please put everything in charge of Mr. Noreen and instruct my men or the herders in any way that you may see will expedite the moving of the herds.

I am sorry I can not come in person for the deer, and realize that the getting off of the herd will be no little trouble to you. I hope that opportunity may permit me to reciprocate in some way. Also, could you send me one white deerskin and about six pair deer legs for boots and charge on bill.

We wish the expedition to be made as cheaply as possible and yet provide anything necessary for the comfort of the herders.

Thanking you in advance for your kind offices in the matter, and for the exercise of your discretion and judgment in fitting out the party,

I am, most respectfully,

J. H. ROMIG, M. D.,
Superintendent Bethel Mission.

BETHEL, ALASKA, *March 29, 1901.*

Dr. FRANCIS H. GAMBELL,

Superintendent Eaton Reindeer Station, Eaton, Alaska.

DEAR DOCTOR: The return of the Lapp who came with the deer will convey to you this letter. The deer came in good shape on March 27, and will be able to reach the mountains in two or three days more. One deer was lost en route for Bethel through some accident. Mr. Noreen, who was in charge of the party, will render an account of the journey. In the spring we will also render an account to the general agent of education for Alaska.

I return one of the agreements between the mission society and the United States Bureau of Education, since I can not send the same to Katmai. The agreements of the Laplanders I also send back, keeping one copy. I am very thankful for your hospitality to the guides sent from here and for your prompt starting of the herd, and for the exercise of your good judgment in equipping and sending off the expedition. As you have sent me no bills from your station for supplies or services rendered the guides and herders, I am at a loss to know how to compensate you for your trouble. In the meantime, until I hear from you on this subject, please accept my recognition and gratitude for these favors rendered to the mission on this occasion. The herd have had a good trip and found pasturage all along the line. We will do all we can to see them located on suitable grounds where they may thrive.

With best wishes and friendly greetings, I am, most respectfully,
J. H. ROMIG.

REPORT ON THE REMOVAL OF A HERD OF REINDEER FROM EATON STATION TO THE VALLEY OF THE KUSKOKWIM RIVER, FOR THE USE OF THE MORAVIAN MISSION.

BETHEL, ALASKA, *March 29, 1901.*

Dr. F. H. GAMBELL,

Superintendent Eaton Reindeer Station, Alaska.

DEAR SIR: I herewith send you a copy of my diary while in charge of the moving of the Bethel herd of reindeer from Eaton Reindeer Station to Bethel Mission, Alaska. I would add that the trip was a

pleasant one. We were favored with good weather nearly the whole time.

I was three or four days longer on the way from Andreafsky to Bethel than I should have been. A guide was not obtainable for the tundra, so I laid my course by the best map I could obtain, which had Bethel placed too far west. The course should have been—from the place where I started to go by compass—about a point more to the east, or southeast, instead of southeast by east, as I traveled. As we were approaching the Kuskokwim the air was thick, and remained so, so that we were unable to see the mountains to the east of the Kuskokwim. The native I had along knew them well, so we could have changed the course long before we did had we been able to locate the mountains.

I remain, dear sir, yours faithfully,

HENRY NOREEN.

P. S.—Dr. Romig requests me to ask you to return the compass by any reliable person who may pass through this way should the opportunity present itself. He does not wish you to go to any extra trouble about it. The compass is the only one he had of the kind.

H. NOREEN.

TRIP FROM EATON REINDEER STATION TO KUSKOKWIM RIVER.

March 1, 1901: Took over from Mr. Lindseth, the assistant superintendent at Eaton Reindeer Station, the Bethel Mission herd of reindeer. He reported having left Eaton Station with the herd on the 26th of February. He traveled on the ice along the coast. Encountered ice the first two days, which compelled him to follow close to shore to escape glare ice. He thereby lost a half day. He arrived at St. Michael with the herd this evening in good condition.

March 2: Could not get ready for an early start this morning, so I thought advisable to give the Lapps and reindeer a rest till Monday morning.

March 3: Keeping Sabbath.

March 4: We got a late start, 12 m. The herd was a long distance from camp, and we had to do a great deal of repacking. Camped on the tundra 10 miles from town. Moss plentiful. Course south.

March 5: Broke camp 8.15 a. m. Traveled on bare tundra. Camped near Pitmiktalik village. Made slow progress on account of scarcity of snow. Moss plentiful. Course south.

March 6: A very severe snowstorm, with high wind. Unable to travel.

March 7: The storm moderated during the day, though too late to make it worth while starting. Went over to Pitmiktalik village and

employed a guide for portage from Pitmiktalik to Andraefsky. Snowing hard in the evening and continued till a late hour. Moss plentiful on high tundra.

March 8: The deer strayed far away during the night. It was 9 o'clock before they were brought to camp. One hour and twenty minutes spent in catching and hitching up the driving deer. Took a southerly course from Pitmiktalik. The snow that fell during the past two days made the going good, otherwise the tundra would have been bare. A young deer injured a leg on a snag. Abundance of moss.

March 9: A start was made 7.35 a. m. Followed westerly base of mountain range, which runs about north and south. Camped on Pastolik River 6.30 p. m., about 65 miles from St. Michael. No lack of moss.

March 10: Started 8.45 a. m. Kept same course till 4 p. m., then crossed over low neck of range about 80 miles from St. Michael. After crossing range took a south by east course. More snow than on west side of mountain, though not enough to interfere with travel or feed for deer.

March 11: Started off at 9 a. m. The country, after crossing the range, is a continuation of low rolling hills. Nearly all hills have moss, but covered with hard-crusting snow from 2 inches to 2 feet. We have been able to choose good feeding places for the deer. There is very little firewood; we have at times had to do with half-cooked victuals. We are camped to-night about 100 miles from St. Michael by route we have traveled.

March 12: Got off at 7.35 a. m. As we are nearing Andraefsky the hills we have traveled over are higher. The freighter had to zigzag down the sides at times, but we were not delayed much. Our course has been parallel with the Andraefsky River, about 3 miles to the west of the same, or south by east. We are camped a few miles to the north of Andraefsky village, which we reached at 2 p. m., and where we will keep the deer until I ascertain where to cross the Yukon. A good place for the deer.

March 13: Myself and Nils, the freighter, and the guide left the camp at 8 a. m. with two deer. I found we were camped about 10 miles from Andraefsky. I sent the freighter back 3 miles from Andraefsky, or as soon as that village was in view, and instructed him to move the camp to within 4 miles of the village. Have engaged another guide to show me the way through the brush on south side of the Yukon on to the tundra. Consider the distance from St. Michael to Andraefsky we traveled about 125 miles.

March 14: Left Andraefsky 9 a. m. with the guide and dog team. Went out about 20 miles. Found some moss about 15 miles from Pitkas Point, in a south by west direction, though not plentiful. The

guide, Pitka Andreoff, gave me information about moss for the next 20 miles.

March 15: Went on foot to the camp. Instructed the Lapps to move to the Yukon River, half a mile below Pitkas Point, in the morning.

March 16: Moved camp over to the north bank of the Yukon.

March 17: Broke camp 8.35 a. m. Traveled south by west magnetic course from Pitkas Point to a knoll on tundra. Same spot mentioned in note of March 14. The only knoll in the vicinity that carries moss. Camped 2.30 p. m. Lost three days at Andreafsky by not knowing conditions of moss and brush on the south side of the Yukon.

March 18: Broke camp 7.45 a. m. Traveled in a southerly direction about 15 miles, camped on a knoll about 4 miles southeast from Chokagtaligamute village that carries moss. There is not any moss between our camping place of last night and to-night.

March 19: Broke camp 8 a. m. Took a southeast by south magnetic course. Traveled till 5 p. m., about 19 miles. Abundance of moss all the way.

March 20: Broke camp 7.25 a. m. Traveled till 11 a. m., about 9 miles, when we crossed a river and camped. A blinding snow storm coming up. Course southeast by south, magnetic. Moss in abundance.

March 21: Broke camp 8 a. m. Traveled same course till 5.50 p. m., about 19 miles. Lost two hours. Camped on the shore of a very large lake. Moss abundant.

March 22: Broke camp 7.20 a. m. Crossed another large lake between 11 and 12 a. m.; then a series of small lakes toward evening. Traveled over high, rolling tundra. Camped 5 p. m. Traveled about 19 miles. Same course. Moss abundant.

March 23: Got off at 9.10 a. m. Three hours were lost in finding, catching, and hitching up the deer. Camped at 5 p. m. Traveled about 15 miles same course. Tundra more level and fewer lakes. No lack of moss. A young deer hopping on three legs.

March 24: Broke camp 7.45 a. m. Traveled same course till 11 a. m., when we sighted a village 3 miles to the east (Ingoragayukemute). The course we traveled proved to be altogether wrong. I engaged a guide there. We are now traveling northeast. Camped 6 p. m. Traveled about 20 miles. Very little snow on the tundra in spots. My first course proves Bethel much farther east than the maps show.

March 25: Broke camp 8.20 a. m. Lost some time in going around thick brush in forenoon. I regret we had to kill a young deer (male). He had injured a foot two or three days ago, was getting worse, and could not keep up with the herd. Moss in abundance. Course northeast. Traveled about 15 miles.

March 26: Broke camp 8.20 a. m. A hard trail; traveled over a number of lakes with about 2 inches of loose snow, which made very

slippery going for the deer. Between the lakes almost bare tundra; course northeast. Traveled about 17 miles. Moss as usual.

March 27: Broke camp 8.45 a. m. Traveled northeast by east the whole day. Sighted Bethel Mission 4.30 p. m. and camped. I continued to Bethel and turned over the deer to Dr. J. H. Romig. Traveled about 18 miles.

HENRY NOREEN.

BETHEL, ALASKA, *July 12, 1901.*

REV. SHELDON JACKSON, D. D.,

Commissioner of Education for Alaska,

Washington, D. C.

DEAR SIR: The branch of the deer herd consigned to and established near Bethel, Kuskokwim River, Alaska (under the care of the Bethel Mission), is ready to render its first report.

Pardon the diversion from the report by our saying that the mission has watched for some time the development of this plan and project, and now views with pleasure and anticipation their successful introduction here.

Owing to the long lasting and wasting epidemic of last season, the mission found itself in such a pressed condition of work for and in behalf of the people that no team and guides could be dispatched early after the deer herd. However, a very reliable man, Mr. H. Noreen, with his guides, started for the deer on February 9, 1901, to bring them in the then lengthening days of spring. The expedition was promptly started for the Kuskokwim as soon as Mr. Noreen arrived at the Eaton Reindeer Station. Dr. Gambell, the superintendent in charge, acting wisely and promptly on the hour, deserves much credit for the success of the expedition. The assistant superintendent, of Eaton, accompanied the herd as far as St. Michael, and an expert deer man helped with the freighting as far as Bethel.

On March 27, 1901, Mr. Noreen and two of the herders arrived, having left the herd a short distance from Bethel. The trip was made with no marked difficulty. A few of the lakes and streams were covered with glare ice, making it difficult to move a large herd of deer across them. However, only one deer was lost by a mishap on the ice; the balance of the herd were in good condition, the drivers stating that the deer looked as well as before starting.

Moss was found in abundance, causing no difficulty to find a camping place. The guide estimated that the deer did move, and readily could move, from 20 to 30 miles per day, excepting the days necessitating a halt at St. Michaels and Andreafsky, while supplies were being brought for the herders and guides. The Laplander that helped with the freighting being anxious to return as spring was rapidly approaching, was allowed to return from Bethel, leaving March 29, 1901.

On March 29, 1901, the herd passed the mission for the chosen pasture grounds in the region of Mount Hamilton. The herd numbered 88 males and 88 females. Photos were taken of the herd, one view of the herd moving and one view as they halted in front of the mission. Many spectators viewed the deer from a distance. Little did this motley array of orphans, widows, and destitute natives realize that this is to be the source of food and clothing for many of their number. Who can foretell the good of this project? The Government annuity to the Indians of the States has verily been a detriment to the Indians instead of a benefit. So here in a time when game and furs are fast disappearing should something be done, and let us hope that all efforts in the behalf of these people may be as wisely planned as the reindeer project of to-day. With the loss of individuality and the necessity of the chase the Indian dies, and with a view to avoid this let us hope that the Government will put aid within the reach of the native that he may be assured of by the employment of his natural traits and faculties.

No one as yet has visited the herd since the leaving of the ice, but a reliable messenger was sent in from the herd, and reports the deer all doing well; that the 88 does all had fawns, and all of these fawns lived but 2. We can scarcely believe such a good report following the long and late trip of the herd, but as we have no reason to think otherwise we judge there are 80 or 84 fawns for the present increase of the herd.

As soon as our supplies arrive someone will go to the herd, and a report will be sent you on the fall mail.

As the present location of the herd is difficult of access during the summer, it is very probable that the herd will be moved nearer the coast than they are at this date. We hope with the growth of the deer herd that between Good-news Bay and Togiak a herd may be kept, as the location is a splendid one for deer.

The Laplander P. N. Bals and family are in charge of the herd. They are well pleased with the country, and say it is a splendid region for deer. Between Bethel and Nushagak the country is one vast deer pasture ground, and in time we hope will be the pasture ground for immense herds of deer, supplying food and clothing for both the native and Alaska's hardy frontiersman.

The native herders are well pleased thus far and think the deer are just the thing, the care of which they seem to take a pleasure in, trying to learn the various necessary points to successfully care for the deer. An estimate of the cost of sustaining a herder will be sent you in the fall.

We trust the deer will prove to be the boon to the people and the mission that will open some good future to these people.

The United States mail was a success last year, and now that the deer are on hand we hope nothing will be more evident than their utility on this vast realm of moss.

I am, most respectfully,

J. H. ROMIG,
Superintendent Bethel Mission.

ROMAN CATHOLIC REINDEER STATION.

ST. MICHAEL, ALASKA, *August 30, 1900.*

DR. GAMBELL, *Eaton Station.*

DEAR SIR: I would like very much to see you and to talk over the question of the reindeer promised by contract to the Nulato Mission. Please let me know where and when I can see you before your leaving St. Michael. As I am going soon to Nulato, it is important for me to have the matter settled, if possible, in a satisfactory manner for both parties.

Yours, sincerely,

J. B. RENÉ, S. J.,
St. Michael, White House, between A. E. Co., and A. C. Co.

ST. MICHAEL, ALASKA, *October 18, 1900.*

F. H. GAMBELL, M. D.,

Superintendent, Eaton Station.

DEAR SIR: I received yesterday your letter of October 13 about the reindeer. According to the first contract their destination is Nulato Mission. I will write at once to Rev. Father Jetté to know his intentions about the time and manner it can be done: Please let me know also what would be the best time and manner of execution when our arrangements could be made.

Sincerely, yours,

J. M. TRÉCA, S. J.

EATON, ALASKA, *October 31, 1900.*

REV. J. M. TRÉCA, S. J., *St. Michael, Alaska.*

DEAR SIR: Your letter of October 18 at hand. Should I be able to deliver a herd of deer to your mission, which I hope to do, it will in all probability not be done before January, 1901. I would like to know what your intentions are, though, by the 1st of December, if possible, as we may be able to move the herd before January.

Very respectfully, yours,

FRANCIS H. GAMBELL,
Superintendent Reindeer Station, Eaton, Alaska.

ST. MICHAEL, ALASKA, *November 6, 1900.*

DEAR SIR: Your letter of October 31 at hand. I did not receive any answer to the letter I wrote to Father Jetté. As soon as I know something definite on the matter I will let you know.

Sincerely, yours,

Rev. J. M. TRÉCA, S. J.

EATON, ALASKA, *December 1, 1900.*

Rev. J. M. TRÉCA, S. J., *St. Michael, Alaska.*

DEAR SIR: I called at your residence in St. Michael on the morning of the 23d ultimo to confer with you in regard to the Nulato herd of deer. My men have arrived from Nome to take the herd to its destination.

Before the herd leaves the station I will either come to St. Michael myself or send an agent and have all necessary papers signed and witnessed. Would you kindly inform me when it would be most convenient to see you and what your plans are in regard to the herd?

Very respectfully, yours,

FRANCIS H. GAMBELL,
Superintendent of Reindeer Stations.

ST. MICHAEL, ALASKA, *December 26, 1900.*

F. H. GAMBELL, M. D.,

Superintendent, Eaton Station.

DEAR SIR: I received your letter of December 1 only on the 22d instant, coming back from a trip, and I was sorry to hear that you had called besides during my absence. I will be very pleased to meet you, and if possible bring to a conclusion the question of reindeer. I expect to go to Nome pretty soon, probably in a couple of weeks, and may have the pleasure of meeting you at your station, unless you prefer to come here sooner to confer on the subject. Until now I have no plans well defined.

Respectfully, yours,

J. M. TRÉCA, S. J.

UNALAKLIK, ALASKA, *January 27, 1901.*

F. H. GAMBELL, M. D.,

Superintendent, Eaton Station.

DEAR SIR: After our conversation at the reindeer station I consider your suggestion as most prudent to secure the transfer of the reindeer to Nulato, and avoid any risk. Therefore I think best to separate from now the herd destined to the mission, then to wait as well for a definite answer from Father Jetté, as also for more oppor-

tune time when the moss can be had easily, either toward spring or early at the beginning of next winter.

Meanwhile the herd could be kept not far from the station, and attended by the Lapp family, the increase of the herd coming to our credit, and we would pay for the food and clothing of the Lapps, from the time after the separation of the herd.

Hoping to see the contract fulfilled according to the wish of Rev. Father René this year and in the best circumstances, I remain,

Respectfully, yours,

J. M. TRÉCA, S. J.

ANNUAL REPORT PRESBYTERIAN REINDEER STATION, GAMBELL, ST. LAWRENCE ISLAND.

GAMBELL, ST. LAWRENCE ISLAND, *July 1, 1901.*

REV. SHELDON JACKSON, D. D.,

General Agent, Bureau of Education, Washington, D. C.

DEAR SIR: I have the honor to submit the following report of the Government school and reindeer station at Gambell, St. Lawrence Island, for the year ending June 30, 1901.

Personnel.—At the opening of the year the personnel of the station was as follows: Rev. William F. Doty, teacher and missionary; P. J. H. Lerrigo, M. D., superintendent of reindeer station; Mr. Ole Krogh, assistant.

July 27 the following natives were taken as apprentices to the reindeer service: Ahtāk̄y'ak, Betwī'nkhuk, Kā'hlo, Ayē'ta.

September 9 Mr. Nils Sara and family arrived. Ayē'yta was discharged at this time for insubordination and general worthlessness. Both Ayē'yta and Kā'hlo's wives stole everything they could lay their hands on. Ayē'yta's wife was discharged, of course, with her husband, and I finally dismissed Mrs. Kā'hlo, being unable to stand her kleptomaniacal performances longer. Kā'hlo was displeased at this and left also, which was well, for he was too lazy and self-opinionated to make a good herder. Mr. Krogh could do nothing with him.

When Kāhlo left, I engaged Sepī'lla, a young unmarried man, to fill his place, and the three young men, Ahtak̄y'ak, Betwī'nkhuk, and Sepī'lla still remain. They are among the best young fellows of the community, strong and healthy, fairly honest, and interested in their work. They have worked faithfully, and I am quite satisfied with their behavior during the year. Having received news of his mother's illness, Mr. Doty left upon the *Beur* September 18, since which time I have assumed his duties in addition to my own, retaining Mr. Krogh to assist in the house and go between the camp and the station.

School work.—The printed forms accompanying this report show attendance at school during 105 days with an average of 21.

We have been interrupted by many things in the course of the year. After Mr. Doty commenced school on September 11, the *Bear* arrived, and the landing of coal and supplies, together with the departure of Mr. Doty, prevented us from resuming until the latter part of the month. It was then continued without intermission, except for a day or two when we were occupied with the reindeer work, until the Christmas holidays.

Having resumed on January 2, we were again interrupted toward the latter part of the month by the threatened epidemic of smallpox, and immediately after that by the rescue of Mr. Egan, a shipwrecked seaman, and the search for his companion. Returning from the search, I found it necessary to operate on Mr. Egan's foot, and immediately afterwards was called to the reindeer camp to attend Mrs. Sara in confinement. The next event was my own sickness from varioloid, which laid me up until nearly the end of February.

School was closed the 1st of April, both because there were many things about the premises which we were compelled to leave undone when the winter closed in, and because the ice breaking away very early (about a month sooner than usual) took most of the children away from school.

The progress of those scholars who have approximated regularity in their attendance has been quite gratifying. Some of the older ones have advanced as far as fractions in arithmetic, most of the pupils who were in the classes last year have been advanced one grade, and great improvement has been made by all in reading, writing, and the use of the English language.

Perhaps in the latter branch of study the most marked progress has been made. Having picked up a large part of their English from the whaling vessels, it was formerly a heterogeneous compound of pigeon-English, intermingled with Kanaka words (as "make, pau, wahinny," etc.); French as "savey," and other barbarisms. It has been my endeavor to correct these bad habits of speech and to substitute grammatical and idiomatic English. While there is still much to be desired, the improvement is remarkable.

The premises.—During the past year the schoolroom has been enlarged by the addition of 20 feet to the front of the building. The frame was constructed by the carpenters from the revenue cutter *Bear*, and the addition completed by us with the assistance of the natives. We have applied three coats of paint to the new part and have given one coat to the old.

The old part of the house still needs another coat of paint, but the white lead gave out and we were compelled to leave it as it is.

We have also doubled the size of the coal shed by building a lean-to upon the north side for the protection of the lumber.

After considerable search we found a suitable location for the winter

quarters of the herders, and erected a small house 22 by 12 by 7 feet at the eaves and 12 at the ridgepole. It is divided into two rooms having separate doors upon the west side and windows on the east. Mr. Sara and his family occupy the south room, and the three native herders live in the other. Mr. Krogh also made tables and bunks for the herders' house. It is lined and ceiled so that it is quite warm.

The reindeer.—On July 27, 29 deer were brought from Siberia by the revenue cutter *Bear*. They were placed upon the other side of the mountain, about 15 miles from the mission, in charge of Mr. Krogh, with Kahlo, Betwinkhuk, Ahtakyak, and Ayeta to assist.

These deer were very wild, and it was almost impossible to get them to stay together at first. However, Mr. Krogh camped near where the bulls of the herd were feeding and hoped to capture the others later.

September 9 the *Bear* arrived again, bringing 41 deer from Port Clarence, with a Laplander, Mr. Sara, and his family. These deer were landed near the camp where the others were feeding, but immediately scattered widely.

Mr. Sara was furnished with provisions, also a tent and stove, and made preparations to remain. A location was found for the winter quarters about 20 miles east of the mission, and on September 22 I sent the first boat load of lumber for the construction of a house. Mr. Krogh went also to build it. September 25, after scouring the country in all directions, Mr. Sara found 10 of the deer; but as they were very wild he was unable to drive them to camp, and had to remain with them some days until they got used to his presence, when they were brought to the camp.

By October 12 the herders' house was finished, and Mr. Krogh returned to the mission, where he has since remained. The winter had now set in; northeast winds were blowing constantly, with snow. The deer were somewhat tamed and remained in the vicinity of the house together.

On the 26th of April the first fawns were born. By this time the weather had moderated, the sun had softened the snow and ice, and the moss was more easily accessible, so the fawns did well. The fawning season continued through May and June, 33 being born in all; 4 were born dead and 3 died subsequently from imperforate urethra and accidents.

The total number of old deer that have died since their arrival on the island is 9. Four died from injuries received in transportation, 2 from falling upon the ice, in all probability, as 1 was found with a broken hip and the other with injuries upon the head. The remaining 3 died of the disease known in Lapland as "slabbs." This is an infectious disease, probably having a special bacillus which enters the system through abrasions on the foot and is carried by the lym-

phatics to the glands throughout the body, chiefly to those in the groin, producing multiple abscesses which open externally and discharge foul pus of a dirty yellowish color. The disease progresses slowly, and the animal finally dies of exhaustion and the toxic action of the groin products.

I examined the foot of one of the deer which died from this disease. The ball presented two scars which may have been the original points of invasion. The foot was much swollen, and incision showed the whole interior to be a mass of pus. The disease is said to be endemic to Lapland and Norway and frequently epidemic. No remedy has been discovered for it, and it is the custom of the Laplanders to kill the animal as soon as the disease is discovered.

The total number of deer now on hand is as follows: Old deer, 61; fawns, 26; total, 87.

The rations allowed to the herders were as follows:

	Mr. Sara and family.	Natives per capita.		Mr. Sara and family.	Natives per capita.
Flour .....pounds..	100	35	Potatoes.....pounds..	5	2
Oatmeal .....do....	10		Yeast.....packages..	2	.....$\frac{1}{2}$
Peas .....do....	5	7	Baking powder.....pounds..	$\frac{1}{3}$	
Green coffee .....do....	9	2 $\frac{1}{2}$	Soap.....do....	3	1
Cube sugar .....do....	4		Matches.....packages..	2	1
Brown sugar.....do....	9	5	Tea.....pounds..	2	$\frac{1}{2}$
Butter .....do....	10	2	Milk.....cans..	4	1
Roast beef .....do....	6	2	Chocolate.....pounds..	1	$\frac{1}{2}$
Salt beef .....do....	12		Corn meal.....do....		2
Bacon.....do....	24	12	Molasses.....quarts..	2	1

It was necessary to slightly modify the ration list furnished with our instructions, as the supplies on hand did not admit of it being followed in all points. For example, we found in November that the supply of salt beef was not sufficient for us to continue allowing it to the natives, so their allowance of bacon was increased to 12 pounds, and having only 159 pounds of oatmeal, we gave the natives instead an increased amount of split peas.

We have equalized the ration as well as possible by these changes, and the foregoing represents about an average for the year. In the account book will be found an itemized statement of the amounts allowed each month. I believe the Laplander, Mr. Sara, is dissatisfied with the ration allowed, although I have from time to time supplemented it with canned fruit and milk from my own private supplies. I might mention that his ration was furnished strictly according to contract, except that the supply of roast beef made it impossible to give him the total amount due him, and that the cube sugar was exhausted before the year was out, owing to the pilferings of the natives when bringing it ashore.

The former deficiency I supplied by giving him more salt beef and the latter by brown sugar, and, in addition, he has had a considerable

amount of meat from the carcasses of the deer which died from injuries. I am of the opinion that his complaints are entirely unfounded, but have referred him to you for satisfaction.

Medical work.—The epidemic of influenza, which commenced in June of last year, continued through July and part of August. As reported last year, it was accompanied by complications of pneumonia and entero-colitis which rendered the mortality very high. From the commencement of the epidemic until August 1 there were 46 deaths. Even this, however, does not represent the total mortality resulting therefrom, for many cases which were simply influenza at the time and apparently recovered speedily, contracted the germs of tuberculosis and have been dying one by one through the year from that disease.

Tuberculosis has been so common that all the garments, bedding, and household furniture of the natives are impregnated with the germs; hence the patient, constantly breathing in the dried and flying sputum, contracts the disease, which in this climate is always rapidly fatal. It is apparent that no drug will, under the unfavorable circumstances which surround these patients, have any curative effect, and the palliative measures, such as removal to a more favorable climate, regulations of the diet and other hygienic measures which in civilized countries do so much to prolong the lives of consumptives, are of course entirely out of the question. I have therefore turned my attention to combating the growth of the disease by a device as to the care of the sick, etc., and to making their deaths when inevitable as easy as possible, endeavoring to relieve the more distressing symptoms and preparing food for them when they are unable to eat the horrible concoctions of the native cuisine.

The first thing a native cries for when he is sick is "white man's" food, and I have found many opportunities of making their last days easier by preparing oatmeal, granola, beef tea, malted milk, etc., for their consumption. Also in the less fatal cases these foods have contributed much to the recovery of the patients.

To entirely check the growth of the disease in the conditions under which they live is a matter of extreme difficulty or impossibility. Isolation of the patients is of course impossible, and contagion by means of the skins used by the family in common is very apt to occur. So many deaths have taken place in the last year, however, that there remains comparatively few severe cases of the disease, and as they have just gotten a new supply of reindeer skins from Indian Point with which they will replace the old ones, which have been in use for two or three years, I am of the opinion that there will be far less sickness in the next few years than during my residence upon the island.

Apart from these cases of tuberculosis there has been much sickness of a less fatal nature during the year. About thirty cases of influenza, one or two of gonorrhoea, one case of acute articular rheu-

matism, several cases of muscular rheumatism, the usual coughs and colds, and skin diseases.

I must mention, in addition, the threatened epidemic of smallpox which occurred in January. The first case brought to my attention was a severe type of variola confluens, and on investigation I found one other, a medium case of variola discreta. Immediately upon this discovery I vaccinated a large number of the natives, continuing until the vaccine was exhausted, and proposed to vaccinate the remainder of them from the pustules upon the arms of the first lot when they should be ready. This measure, together with an extremely cold spell which occurred at that time, checked the spread of the disease and there were in all but five cases, including myself, of which one only proved fatal.

The vaccine virus was nine months old and further weakened by changes of temperature, so that it did not take on either myself or Mr. Krogh, both of whom had been vaccinated, Mr. Krogh about two years previously and I something like twenty years ago. It acted well, however, upon most of the natives. In my own the immunity conferred by the previous vaccination, while strong enough to overcome the weak virus used at this time, was not sufficient to entirely protect me from the disease itself, with which I was necessarily brought into close contact; hence I suffered from an attack of varioloid, which, however, produced no more serious consequence than that I was unable to vaccinate the remainder of the natives.

There has been no surgical work of any consequence during the year beyond the amputation of three toes from the right foot of Mr. Egan. This was done under ether and difficulties, but gave a good result.

Vital statistics.—Between July 1, 1900, and June 30, 1901, a total of 48 deaths have occurred, as follows:

Tuberculosis	20
Pneumonia	14
Influenza and enteritis	12
Variola	1
Uræmic coma	1
Total	48

During the same period there have been three births, making a net decrease of 45. The census statistics are influenced somewhat by members of the village who have been at Indian Point and Cape Nome, returning.

The number of persons resident at Sivukuk at present is 244; at Southwest Cape there are 20, making a total of population of 264.

Last report of Mr. Gambell, population	365
Spring of 1899	334
Spring of 1900	299
Spring of 1901	264

Discipline.—The order has not been so good as during last year. The return of Captain Jack and Maiyukhuk, the men who attacked Mr. Doty, did much to injure the discipline of the village.

The former told great stories of the kind way in which the "white men" had treated him, and declared that all the chiefs were his friends. He seems to have enjoyed his period of punishment very much, and his experiences have caused the natives to lose a great part of their fear of the punishment of the white man.

In the fall they made whisky several times, those particularly engaged being Maiyukuk and Uzuk, but involving of course all their families. During the previous year no one had dared to do this, fearing the revenue cutter and Captain Jack's fate, but no sooner had he and Maiyukhuk returned than they commenced to make things lively for us. Maiyukuk signalized his return by hanging a sick woman. Both Mr. Gambell and Mr. Doty worked hard against this custom, and I had hoped it was entirely suppressed, as no one had been killed previously during my residence here. They also stirred up a great deal of dissatisfaction among the natives, so that it was almost impossible to get them to do any freighting for us.

May 10 some of the Indian Point men came over and brought whisky, which resulted in the intoxication of one of our men. I severely reprimanded them, told them that we were glad to have them come to trade with the natives, but would on no account tolerate the introduction of whisky.

In view of the drinking which took place last fall, and also a few times during the winter, I would recommend that the revenue cutter search the village for stills and warn the men to refrain from the manufacture of whisky.

Supplies—The following supplies are now on hand:

Split peas	sacks..	11	Small butcher knives	2
Green peas	sack..	1	Large butcher knives	7
Butter	pounds..	2½	Tin spoons	dozen.. 13½
Butter	tins..	28	Large iron spoons	3
Tobacco	small boxes..	3	Bits	box.. 1
Leaf tobacco	package..	1	Rasps	2
Flour	sacks..	6	Iron ladle	1
Yeast	box..	¼	Hatchets	18
Soap	packages..	2	Hammers	3
Black powder	boxes..	6	Drawing knives	2
Cans B powder	half pounds..	7	Saucer	1
Cans B powder	one pound..	11	44 cartridges	boxes.. 700
Tea	boxes..	5	Gun parts	box.. 1
Potatoes	cans..	3	Cotton shirts	26
Chicory	box..	1	Shot	sack.. ½
Onions	cans..	3	Shells	boxes.. 4
Coal-oil stoves		10	44 reloading tools	do.... 4
Bacon	pieces..	2	Salt	sacks.. 8
Hunting knives		2	Jean shirts	dozen.. 2

Jean pants	3	No. 2 primers	2
Rip saws	4	Patent screw driver	1
Fine combs	boxes.. 6	Ladies' undershirts	4
Large comb.	do..... 2	Ladies' underdrawers.....	4
Needles	packages.. 27	Wool socks	pairs.. 5
Thimbles	21	Cotton socks.....	dozen.. 3 $\frac{3}{4}$
Goggles	pairs.. 6	Suspenders	pairs.. 2
Scissors.....	do..... 2	Child's undershirts	3
Men's drawers	4	Child's underdrawers.....	2
Felt hats.....	51	Men's undershirts	2
Adz	1	Box scarfs.....	4
Lamp oil	gallon.. 25	Leg skins.....	boxes.. 2
Tar paper	rolls.. 2	Red paint	can.. $\frac{1}{2}$
Molasses.....	kegs.. 3 $\frac{1}{2}$	Zinc.....	roll.. $\frac{1}{2}$
Walrus skin.....	1	Sheepskins.....	22
Blankets.....	6	Reindeer skins	2
Whistles	boxes.. 5	Telescopes	6
Canvas.....	pieces.. 4	Lead	sack.. $\frac{1}{2}$
Gun wads	boxes.. 40		

Evangelistic work.—We have continued through the year the lines of work laid down in the report of last year, weekly meetings at which some special Gospel story or phase of Bible truth has been presented, and a constant effort by conversation during the week to bring the people to realize the reality of spiritual things, the love of God and the life of Christ.

The work has been very much more encouraging this year than last, because I have been able to speak so much more freely to the natives, to explain things better, and to get their ideas. The terrible mortality which resulted from last summer's epidemic awakened in many of them more definite desires for a knowledge of the hereafter than they have yet known, and I was able to make a deeper impression upon them with the truth of God; also our medical work gained their gratitude to some extent. Many of them claim to love Jesus and to be His friends, and I am convinced that some of them are really trusting Him.

I do not mean to say that any of them could give a definite and concise statement of the Gospel plan, but they listen attentively to the stories of Jesus and seem to grasp after the knowledge of Him as something desirable, so that while they are not far enough advanced yet for the forming of a church, I believe that the time is not very far off when some of them will be. And some, I verily believe, have passed into the presence of God trusting Him as well as they knew how. I have talked with the sick and dying many times about the love of God, and while they at first did not care to listen, now they give willing attention.

That they have largely lost their belief in the old superstitions is certain, for Shamanism is little in evidence now, and Assoona, the most influential of the Shamans, recently said to Mr. Rogoras, a Rus-

sian scientist who was investigating the folk-lore, that he had ceased to practice his tricks of legerdemain, and that the native spirits could not stay when white men came to live among them. I am sure that the work would be much facilitated if some of the children were taken into the home of the missionary where they might receive the careful training of Christian home life.

It is well-nigh impossible to inculcate into them habits of cleanliness while they are constantly under the influence of the filthy customs of their own homes. Some of the habits of the natives are loathsome in the extreme, as, for instance, washing the face and hands in urine, wiping the expectoration and nasal discharge upon the bedding, careless handling of food, and other things not to be mentioned. The children may readily be taught to keep themselves clean, but it can not be accomplished while they are on the outside. They must enter the home and observe the ways of the white man.

Also, as they necessarily come in contact with very few white men besides the missionary, they do not learn English by any means so fast as do the natives of the Siberian coast or the Alaskan mainland. In the intimate contact of daily home life they would soon gather the genius of the language, and it would be possible by precept and example to mold their character, to establish right principles, and, above all, to teach them the word of God and to develop them into a medium of expression between the missionary and the people.

It is a paramount necessity of Christian work among the heathen, either that one should have a good interpreter or that one should speak the language perfectly. The latter is a matter of very great difficulty. I have been at work two years and have succeeded in unraveling a great many of the difficulties of the language, making extensive notes which will, I trust, be of service to my successor, but there remains much to be done, and it will be years before it can be thoroughly mastered. The children, on the other hand, may be in a comparatively short time very good interpreters.

As far as the practical side of the question is concerned, it would be a very easy matter to make room in the garret, which is now used only for storage. By cutting out some superfluous braces, laying a floor and putting up partitions, there would be ample sleeping accommodations for ten or twelve children, perhaps for more. Their support would cost very little, perhaps from \$35 to \$50 per year each. It would be advisable to take two or three children at first and let them become somewhat accustomed to the usages of the home. Then more could be taken, and they would learn much more rapidly from the example of the first.

Appended hereto is an abstract of the journal kept by me during the past year. Trusting this report will meet with your approval, I am,

Yours, sincerely,

P. H. J. LERRIGO, M. D.

ABSTRACT OF DAILY JOURNAL ON ST. LAWRENCE ISLAND KEPT BY
P. H. J. LERRIGO, M. D.ST. LAWRENCE ISLAND, ALASKA, *July 1, 1900.*

July 1, 1900: Sunday. Operated on the Chinaman. Quiet day.

July 2: 60°. Southwest; clear. Washing and house cleaning.

July 3 to 9. House cleaning. The death record has gone up to 22. Assoona is improving. Shaalook's second wife and child died. Mr. Doty has a touch of enteritis, but is recovering.

July 13: Twenty-six persons have so far died of the epidemic. The direct cause of most of the deaths was pneumonia. The administration of medicine is almost useless, as it seems impossible to persuade the natives to protect their heads and chests. Many of them sit outside upon the ground or in the colder parts of their houses. The complications which accompanied the epidemic during the early part of its course were mainly respiratory, pneumonia and bronchitis, but now many of the natives are suffering from entero-colitis. The latter is not so fatal as pneumonia, all those complaining of it having so far recovered under treatment. Nū'chōnes's wife, however, is in a very bad way and will probably die. He has already lost his twins by the epidemic. Assoona is able to be around somewhat, but his wife and boy are still very ill. Many dogs have been sacrificed according to their custom of killing a dog at the death of a man. The Chinaman is progressing very slowly, systemic infection having taken place.

July 14: Nū'chōnes's wife died last night. Aiyā'gon and Assoona's wife are a little better, also Anā'gasook. The Chinaman is improving. A small schooner passed. Temperature, 55°. Light northeast; cloudy.

July 15: Shaalook's wife returned two pans which she had stolen. We had found it necessary to inquire into the matter, not for the value of the pans, but because the natives apparently gather that trifling robberies can be committed with impunity. No service could be held on account of the sick Chinaman in the schoolroom.

July 16: 45°. Northeast. During the night the *Progress* came in again. Mr. Shockley and Captain Gunderson came ashore and stayed until about 4 a. m., when we went aboard, taking with us the Chinaman, who is somewhat better and desires to go home to China. Mr. Shockley mentioned that they had discovered a coal mine on the Siberian coast, yielding first-class coal, easily accessible. We purchased from Mr. Vanderslip a considerable quantity of provisions. The *Progress* left during the morning.

July 17: 50°. Northeast. Found the natives very anxious to trade, having a large quantity of merchandise of which they had been unable to dispose to the whalers. They were in need of many things, as they were just recovering from sickness, hence we considered it advisable to trade to some extent. Rice and canned goods were chiefly desired.

July 18: 48°. Northeast; cloudy. Mr. Doty traded a large part of the day, principally rice and sugar. The natives are very glad to get these things. In many cases the flour and pilot bread which they received from the whalers early in the year are gone, and they have nothing to give the sick people but seal and walrus meat. The rice will undoubtedly have a good effect upon the health of the community. Wrote report of last year's work.

July 19: 48°. Northeast; cloudy. Ongō'ra, an old man, died last night. He had previously given a dance to drive out the devil. We have not recently heard of any devil driving, but the people have evidently not entirely abandoned the custom. Upāi'ye has had a very severe attack of epistaxis from the posterior nares. We did not hear of it until the morning, although it had been continued for twenty-four hours. She was much exhausted and her pulse almost imperceptible, extremities cold, and face pale. I desired to plug the posterior nares, but the relatives would not permit it, fearing to hurt her. Finally checked the bleeding by spraying with astringent solutions. She is very weak, but I think will do well now.

July 20: 45°. Bright forenoon; cloudy afternoon. Three deaths occurred to-day—a man, a woman, and a child. The woman and child were buried in a blubber hole, while the man was carried to the mountain, as usual. Upāi'ye is much better. The bleeding did not return, and she is regaining strength.

July 21: 42°. Mist and light rain. Commenced a tour of investigation to verify the death record. Many of the people are suffering severely from entero-colitis. The rice which we traded has helped some of them. A woman in Ifkowan's house died to-day.

July 22: 40°. Mist and clouds. Sunday. No service held to-day, the schoolroom being filled with lumber. Assoona's wife died.

July 23: 45°. Southeast; cloudy. Oksūhuk, a woman in Oozuk's house, died last night. Completed investigation of death record, and find that 44 have died in all, including the 6 who were drowned in the canoe attacked by the walrus. Twenty-one of these deaths occurred prior to July 1 and are reported in last year's record. In taking a walk to the mountain we discovered the body of Ongōra, who died on the 19th. It was torn very much by the dogs, the head being completely severed from the trunk. One hand and the toes of one foot were gnawed away. He was not a native of St. Lawrence Island, although he had lived here many years, and the bearers had laid him on the ground about halfway to the mountain, probably becoming tired. Held a belated Fourth of July celebration in the evening by the aid of some crackers. The boys and even men seemed to be quite enlivened. They have hardly been themselves since the commencement of the epidemic. A pall of sadness and depression has hung over the village. Sepilla says that the old woman who died in Ifko-

wan's house on the 21st asked to be killed, according to the old custom, but her friends refused, saying that it was not good that she should die in that way. However, she refused food, and died of exhaustion. So the power of the heathen superstitions is weakening. Notwithstanding the extreme mortality attending the epidemic, none have been helped to their death so far as we have been able to ascertain.

July 24: 54°. Southeast; bright. Wash day. Sepilla and Pennyau have learned to wash quite well and helped us. In the afternoon we went to the mountain and took some pictures.

July 25: 52°. Northeast; bright. Aiyāgōn, the eldest son of the chief Assoona, died this afternoon at about 4 o'clock. His father and aunt were much affected. Aiyāgōn was one of the most promising boys in the village, a good student, bright of intellect, amiable of disposition. He was about 10 years old. Had measles early in the epidemic, followed by influenza. Exposure resulted in pneumonia, which has just terminated fatally. We took a long walk to the peak of the mountain, returning down the precipitous slope which juts into the sea.

July 26: 52°. Northeast; bright. Printed some pictures from the plates made the other day. For first attempts they are pretty good. Photographed the mountain and some of the native houses, also the mission house with the children in the foreground.

July 27: 54°. Northeast; bright. Thick fog toward evening. We hired Savilla's small fishing canoe and made a trip to the other end of the lake and up the ridge. Should have made a more extended journey, but feared the *Bear* might come in our absence. Had a very hard pull back against a strong northeast wind. The lake does not seem to be as deep as we had supposed, 25 to 30 feet being its greatest depth. Big dance this morning (called by Sepilla and Ahoalako) on a walrus skin in front of Ifkowan's house. It was for trading purposes.

July 27-30: The United States revenue cutter *Bear* arrived about 10 a. m. July 27 with Dr. Jackson aboard, bringing us the yearly mail. Dr. Jackson came ashore with three carpenters, who immediately commenced work upon the schoolhouse, putting up the framework of a 20-foot addition. The *Bear* also brought 29 deer for this place. Dr. Jackson had been unable to bring the Lapps who were expected and proposed to procure natives to assist Mr. Krogh. At first the natives were quite reluctant to engage, apparently not thoroughly understanding the matter, although, it has been repeatedly explained to them. After Shoolook, who had been on a hunting trip, arrived, however, they became more enthusiastic, and Kahlo, Ayeytuk and wife, Ahtakyak, and Betwinkhuk were engaged. The *Bear* landed the deer on the other side of the mountain and Mr. Krogh and his helpers were left with their supplies to care for them. Dr. Hawley stayed with us three days while taking a census.

Captain Jaek, who was aboard the vessel, was landed and allowed to visit his friends. Dr. Jackson afterwards took him, with his wife and child, over to Indian Point, furnishing him with a supply of provisions with the understanding that he is to bring deerskins for them next year. We found that we were a day ahead of the calendar time, hence a repetition of the 29th. The *Bear* left about 8 p. m.

July 31: During the morning we paid off the natives whom we had working for us during the *Bear's* visit, building the house, carrying loads to the shore, etc., retaining Ahtaiyukhuk, Maiyukhuk, Aguehky, Savila, and Tungaits to assist upon the house. In the afternoon we worked upon the house and straightened up the rooms to some extent. A man who had been to Nome and was brought back by the *Bear* died to-day.

August 1: Worked upon the schoolhouse. Mr. Doty made inventory of the goods left by Dr. Jackson to trade in behalf of the reindeer serviee.

August 2: Buster came, saying that Mr. Krogh was siek. We at once started for the camp, taking medicine and beef extraet. Were glad to find that he was not seriously ill. Walked baek during the night, arriving about 2 a. m.

August 3: Slept late on aecount of our wearying journey. Completed the weatherboarding. Dispatched supplies to Mr. Krogh by Atluguk's canoe. Deteeted him in an attempt to steal sugar; reprimanded him severely, but promised to forget it this time, provided the misdemeanor were not repeated. Mr. Doty traded for many things needed by the herders. One old woman died.

August 4: At work on the schoolhouse. Floor finished. Child in Owittillon's house very sick. They have extracted many of his teeth, thinking his sickness is due to the toothache. He has entero-colitis; has been suffering for two weeks and will probably die.

August 5: The deer are very wild and seatter widely. The herders are mueh the same. It takes a great deal of Mr. Doty's persuasive eloquenee to keep them satisfied and in good humor.

August 6: Worked on house. Mr. Doty showed Assoona how to eommence his little building. Ahtakyak's mother, who is reeeiving a half-ration from the Government, brought mittens, soeks, and trousers whieh she had sewn.

August 7: 40°. Southwest; light rain; high surf. Finished sehool-room.

August 8: 45°. Northeast. Spent a large part of the day eleaning out the storehouse. Commenced lining the walls of the schoolroom. Mr. Krogh came from the eamp. Betwinkhuk and Kahlo are siek and have returned home to recover. Betwinkhuk's mother eame with her ehild asking for food. We offered to send her ehild down to the sehool at Unalaska, but eould give no food, as the supplies in the store-

house are quite inadequate for the number of persons already depending upon them. Kahlo says that while he was with the herd, when any of the deer ran away he prayed to the "Holy Ghost," our God, to help him bring them back.

August 9: 38°. Northeast; violent gale with heavy rain. The weather too severe for the herders to go back to camp. Continued work in schoolroom.

August 10: 41°. Northeast; cloudy; a little rain. Finished work on the inside of the schoolroom except fitting the door. This morning we saw a corpse being carried to the mountain by an unusual and circuitous route. We heard of no one who was dangerously ill, and so inquired of many men as to the occurrence of the death. They all assured us that they knew nothing of the matter, or that no one had died, until we asked Eruk, who, after some pressing, told us that Sivahuk's wife had been hung on account of sickness. Eruk says that Maiyukhuk performed the hanging. This man is an Indian Point native and tried several times to break into the house during Mr. Doty's residence here and threatened his life with a pistol. He spent last winter at Cape Nome, but was brought back by the *Bear*. He has been very surly since his return and while engaged on the house he left the boards guarding the windows so that he could get in. I discovered it in time and frustrated him, but during the night an attempt was made to force an entrance. The intruders scattered when we put in an appearance. Mr. Doty has been quite unwell for the past two days.

August 11: 40°. West; light clouds. Talked with others in reference to the killing yesterday and Eruk's story was confirmed. We sent a message to Maiyukhuk, through the chief, severely censuring his conduct and bidding him walk carefully in the future. If he continues his present attitude we may find it necessary to ask Captain Tuttle to remove him next month. Kahlo is still sick. It seems he considers himself a great medicine man and powerful with God in prayer. He desired remuneration for his intercessory efforts in behalf of the deer. Endeavored to disabuse his mind of the idea that God would listen to him more than to others. Mr. Doty is somewhat better. Worked on the schoolroom door and window and cleaned the kitchen chimney. Mr. Krogh and Betwinkhuk returned to the herd.

August 12 (Sunday): 42°. Southwest; bright. Assoona worked upon his house, although we told him that this was God's day. Nongkora came and desired to trade. He was with the *Anaska* when she went ashore and was brought back by the *Bear*. He has been very sick, is extremely emaciated, and can not live long, evidently being far gone in consumption.

August 13: 48°. Southwest; bright. Wash day. Many of the people have gone to summer hunting grounds. Some of them fished for cod to-day.

August 14: 50°. Southwest; cloudy, and a little rain. Put moldings upon the corners of the house. In the evening we finished reading Arnold's "Light of Asia."

August 15: 50°. Northeast; bright and clear. Commenced painting the house. A small schooner passed in the morning.

August 16: 48°. Northeast; bright and clear. Painting. Finished the priming coat. The little boys are becoming quite fond of playing ball. We have shown them how to use the balls and bats brought for them by Mr. Doty, and they amuse themselves all the day with them. Many salmon are reported in the lake toward the middle of the island. Rakhak has undertaken to bring some back to us when he returns from his hunting trip.

August 17: 45°. Northeast; strong. Painted house, second coat. Shuluk met Mr. Krogh on the other side of the mountain. He was prospecting in a little canoe for a suitable place to put the winter quarters of the herders.

August 18: 48°. Bright and clear. Painting. Mr. Krogh returned. He has not yet succeeded in finding a site for the winter quarters. He tells us that he finds great difficulty in inducing the natives to work, complaining particularly of Ayeytuk, with whom we shall have to "labor." The herders found the carcass of a deer with its left hind thigh broken. It had not been shot and Mr. Krogh did not think the dogs had killed it, although it was partly eaten. Eleven deer are in camp.

August 19: Sunday. 40°. Strong southwest; cloudy. A small two-masted schooner anchored near the reindeer camp upon the other side of the mountain. Sepilla says the captain tried to trade with the native herders (Mr. Krogh being absent) for a deer, giving a small boat in exchange. In the evening she sailed westward. We could not go to her on the other side of the mountain on account of the heavy surf.

August 20: Monday. 40°. Rain. Mr. Krogh returned to the herd. Unable to paint on account of the rain. Spent the day reading and studying.

August 21: 50°. Bright. Painted.

August 22: 48°. Northeast; light clouds. Gave exterior a third coat of paint and started on interior.

August 23: 48°. Cloudy. Separated lumber for the herders' house. Started to enlarge the coal shed for the purpose of storing lumber and for the accommodation of reindeer when visits are made from the herd in the winter. Continued painting interior of schoolroom and put new base piece in stove. Read *Les Misérables* in the evening.

August 24: 46°. Cloudy; light rain in the morning. Continued work in schoolroom and on shed. Baked. Piled lumber ready for storing in shed. In evening a small schooner anchored on the other side of the mountain.

August 25: 52°. Cloudy; southwest. In afternoon the *Hattie*, Captain Coule, anchored offshore. She is a schooner chartered by Mr. Bruce for trading purposes. The captain's wife sent us some newspapers, which were most welcome. Mr. Doty went aboard and had a pleasant call. Finished the shed and stored the lumber. Qwitillon's baby died of catarrhal pneumonia. Mr. Krogh has found a suitable place for the winter quarters about 20 miles east of the mission, upon the shore.

August 26: 40°. East; violent with rain. The schoolroom being uncompleted, we were unable to hold service.

August 27: 40°. Severe gale from the east. We had expected to make an effort to transport the lumber for the herders' house to the site selected by Mr. Krogh, but the weather was too severe.

August 28: 36°. Storm continues; north wind.

August 29: 36°. Stormy; not so much rain. Made forms and tables for schoolroom.

August 30: 40°. North; cloudy. Prepared September rations. The *Samoa*, a Russian steamer, passed. The United States revenue cutter *Manning*, Captain Roberts, dropped anchor off the west shore. We dined with the captain, who had letters for Mr. Doty. She left about 8 p. m.

August 31: 48°. Southwest; bright. Transferred the lumber for the herders' house to the beach and sent two boat loads to the camp. The natives caught a considerable quantity of cod.

September 1: 45°. Northeast; light showers. Sent two loads of lumber to the herders. Mr. Doty went in Shuluk's boat. Yesterday morning, when we started to move the lumber, we had a very distinct understanding with the natives that we were to pay them 75 pieces of bread per load. Shuluk's boat, with Mr. Doty, returned about 8 p. m. and shortly afterwards Shuluk presented himself for payment. I opened the storehouse and counted out 150 pieces of bread for the two loads which Noonwock, Shuluk's son, and Upa received in their key-paguks. It was dusk, rapidly darkening, and with Shuluk were his two brothers and his two sons also, Tungait and Upa. They seemed to have come in a body to make trouble. After paying Shuluk I gave Tungait 6 pieces for services in the morning. Shuluk then broke into protestations that he had not received enough pay. I reminded him of the agreement and asked what plea he had for extra payment. He answered only by a wildly incoherent outburst. After considering some time I endeavored to make plain to him the injustice of his demands, but quite failed to pacify him. Finally, I said to him sternly, "Shuluk, I have finished," and started to close the door. He resisted me, as he was leaning against it. He then grew more demonstrative and insulting, telling the boys to throw the bread back into the storehouse, which I prevented them from doing, then tried to close the

door forcibly, but Shuluk was equal to several of me. This angered him more, and he sent Wumkone home to fetch his gun. Pretty soon, taking him when he was off guard, I shut and locked the storehouse and left them to their own devices.

September 2: Sunday. 40°. Southwest; rain. Held service in the morning, Mr. Doty speaking upon Psalms 122:1: "I was glad when they said unto me, let us go into the house of the Lord." The attendance was very good, considering the weather. Shuluk was in the audience, but went out without speaking to us. Concerning his outbreak yesterday, it was the more remarkable in that he has always been the staunchest friend of the mission. Tungait, who was present last night, volunteered the information to-day that he considered Shuluk to have received sufficient payment. Shuluk seems quiet and has evidently seen the error of his ways.

September 3: 40°. Rain; southwest. The letters which Mr. Doty received by the *Manning* brought grave news in referenee to his mother's serious indisposition, and his brother and sister having written him urging him to return home, he has decided to return on the revenue cutter *Bear*. We spent the day preparing for his departure.

September 4: 38°. Violent north wind. Mr. Doty opened school for the year, holding a two-hour session in the morning and two in the afternoon. Twenty-seven children were present.

September 5: 36°. South; a little snow mingled with the rain. One of the native houses was set on fire by the overturning of a lamp. Considerable damage was done to the interior, but it was extinguished before the walls were seriously hurt. Mr. Doty held school.

September 6: 36°. Southeast; a little snow. School.

September 7: 45°. Southwest; bright and clear. School. Took some pictures in the afternoon.

September 8: 44°. Northeast; cloudy; rain. Mr. Doty is quite unwell.

September 9 and 10: 36°. Northeast. On Sunday morning about 10 o'clock the *Bear* arrived. We were unable to go aboard for some time, on account of heavy seas. About 2 o'clock we went off in Shuluk's boat. The breakers were too heavy for the landing of coal, and Captain Tuttle took the boat around the mountain and landed 41 deer near the camp. The Laplander, Mr. Sara, and his family came from Port Clarence to care for them. The *Bear* left about 1 p. m. the 10th for Indian Point and will return to-morrow to land the coal. The mail sack most acceptable.

September 11: The *Bear* returned at noon. Four boats went out to her and landed about 115 sacks of coal. The natives would not work after dark. Mr. Doty went aboard. The natives have been told by some one on the *Bear* that the captain is about to send ashore a large amount of provisions, clothing, etc., to be given to them gratis, and

are clamoring on every side for their share of the spoil. I have had a talk with Captain Tuttle about this matter and have requested him not to leave any supplies for distribution among the natives. Many reasons lead to this request. In the first place, we have had distinct and emphatic instructions from the Department not to give food and clothing to the natives. It was a constant effort of my predecessor, Mr. Doty, and has been also of mine, to encourage self-support and manliness among the natives. We have employed them on all possible occasions, paying them liberally each time, but have given nothing to them except a little food in isolated cases of severe illness and a feast at Christmas time. While they resent this and constantly beg for one thing or another, we believe that it has stimulated them to a proper exertion for their daily bread and taught them the dignity of honest labor. They are at present in no special need of supplies. The epidemics by no means crippled the working force of the community, indeed they may almost be said to have helped it, for the ones who have succumbed are the aged and feeble and children, so that their relatives are relieved from the burden of their support. We have repeatedly offered to send the children of the poorer ones to Unalaska to be supported and educated free of cost, but they do not care to consent. There is no real indigency in the village. At the same time they would all like the "white man" to give them food and clothes so that they might not be under the necessity of working. There is a smoldering fire of discontent in the village. Maiyukhuk, the leader of the opposition, takes every opportunity to vent his spleen, and even Shuluk and the natives who have, hitherto, been most favorable to the mission are disaffected. I believe that the giving of food and clothes with the inevitable inequality which they would see in the distribution would be a "casus belli" which would undoubtedly lead to an irruption, and to give them these things indiscriminately would undo the work of two very arduous years, pauperize, and demoralize the people. I might add that Mr. Doty concurs thoroughly with me in this opinion. Mr. Krogh came from the herd. Two deer have died from injuries received in transportation.

September 12: 35°. Northeast; violent gale. The *Bear* had to go to the western shore on account of the gale. After a great deal of urging I induced two boats to go out to her. In going around the point they were caught between the two currents, and after being out all morning had to return without a load. In the middle of the afternoon the *Bear* disappeared into the storm. Paid the boats for the work, giving 40 pieces of bread for each load, and extra on account of the severe trip (which, however, was fruitless) this morning. Have had a very hard day of it.

September 13: 35°. Gale continues; very hard rain all day. Brought coal from the beach to the coal house.

September 14: 35°. Weather about the same. Wrote letters. Ahtakyak picked up coal which had escaped from the broken coal and carried it to the coal house.

September 15: 38°. Wind moderated; rain. The *Bear* came in sight, but disappeared again in the fog.

September 16: 45°. Light northeast breeze; cloudy. Service in the morning. Spoke to the people about the ecumenical conference for foreign missions. The *Bear* came about 1 o'clock, but could not go out to her on account of the heavy surf.

September 17: 45°. Northeast; cloudy. Spent most of the day trying to induce the natives to go to the ship. Finally persuaded Wungaiye and went in his boat. Was unable to bring a load back on account of the surf.

September 18: 48°. Northeast; bright. Succeeded in landing all the reindeer goods and about 25 sacks of coal. The breeze had by that time freshened and the surf was too high to continue unloading. The *Bear* left about 1.30 p. m. Had great difficulty in satisfying the natives when it came to payment. Had to give a sack of flour per boat load, which is about three times the value of the work.

September 19: 40°. Northeast. Had most of the coal brought from the beach. Nils Sara and Betwinkhuk came from the herd. Three deer have died since landing. Others are sick. Kahlo has trouble with his eyes.

September 20: 36°. Northeast; cloudy; light rain and snow. Spent most of the day arranging the reindeer supplies in the storehouse. Sara and Betwinkhuk returned to the herd. Yawaksuk, who recently found five deer astray and drove them to camp, came for pay. I gave him a sack of flour. He claims to have spent three days in the matter, which I, however, do not believe. As he was not satisfied, I told him to talk to Dr. Jackson about it next year.

September 21: Northeast; cloudy. Sorted out remainder of lumber for herders' house and had it carried to the beach. Kahlo came in; he is just married and desires to take his wife to the camp. I consented upon the condition that she do all the sewing for the herders.

September 22: 45°. Northwest. Sent Shuluk's boat with the lumber and supplies for the herders. Mr. Krogh went also and will stay until the house is finished. Washed clothes.

September 23: 42°. Northeast; cloudy. Service. Subject, "Shew me Thy way, O Lord."

September 24: 38°. Northeast; heavy rain. School. The gale made attendance small. Asked Ahninga not to come. He turned up this morning and evidenced his intention of pleasing himself. Do not care to have my experience of last year repeated with him.

September 25: 36°. Northeast; cloudy. Mikkelsara and Ahtokyak came from camp. The Lapp has found ten of the deer, but can not

drive them to the camp on account of their wildness. Must stay with them for a while.

September 26: 30°. Northeast; cloudy. Sent canvass for a small tent to be used by the men who are to stay with the ten straying deer; also provisions for them.

September 27: 40°. Southwest; bright. Most of the people hunting, consequently small attendance at school.

September 28: 40°. Southwest; cloudy. All the children are helping their parents to catch fish. Could hold but one session of school to-day.

September 29: 40°. Southwest; clear. Baked bread. Prepared October rations for the herders.

September 30: 41°. Southwest; mist and rain. Spoke to the people from the parable of the ten virgins.

October 1: 36°. Southwest; heavy mist. School.

October 2: 36°. Northeast; heavy rain. School. Sent October rations to camp.

October 3: 46°. Southeast; rain and mist. Commenced to induct the older boys into the mystery of factoring preparatory to taking up fractions. The attendance is so irregular that it is a question whether we shall reach the latter subject before the year is over.

October 4: 46°. Southeast; mist. School. Sepilla came from camp. Reports house nearly finished.

October 5: 36°. Snow. School. Am quite unwell. Severe cold with enteritis. Was forced to close school early.

October 6: 40°. West. Baked.

October 7: 44°. Calm and bright. Service in morning. Am still quite unwell.

October 8: 36°. Southeast; rain. School. Ahtakyak came from camp.

October 9: 37°. West; rain and mist. School.

October 10: 32°. Bright and calm. School. Made some pictures.

October 11: 34°. Bright and clear; east. School.

October 12: 30°. Violent northeast. School. Mr. Krogh came from the camp, having completed the herders' house. He reports 55 deer now in camp. One has died, making a total of 5, and several more are sick, suffering from large ulcers caused by insects laying their eggs under the skin. Kahlo is not behaving well, and his wife refuses to do the sewing required of her.

October 13: 32°. North; snow.

October 14: 28°. North-northeast; cloudy. Service in morning.

October 15: 30°. Northeast; snow. A two-masted schooner passed down the straits.

October 16: 30°. Northeast; bright and clear. Another deer has died. Ahlonga is suffering from acute miliary tuberculosis. He is

very ill, and nothing can save him. Gave him medicine to-day and food, as he is unable to eat seal meat.

October 17: 30° to 26°. Northeast; cloudy; snow. A dance was held this morning in Oozuk's house, which most of the people attended. so that I was unable to hold the early session of school. Mr. Krogh afterwards saw an intoxicated man coming from the direction of the house.

October 18: 26°. North; snow. Lake partly frozen. Big dance at Ahlonga's house. The children did not come to school on account of it. I went around to see many of them and urged them to come to-morrow. Could get no information as to who furnished the whisky.

October 19: 25°. North; cloudy. Better attendance at school to-day. Ahlonga is rapidly declining. Cooked some gruel for him and gave him medicine. Mr. Krogh put double windows in the sitting room, which makes it very much warmer.

October 20: 25°. Wind changeable; cloudy; snow. Lake completely covered with ice. No school. Washed clothes.

October 21: 26°. Southeast; snow. Service in morning. "Except a corn of wheat fall into the ground and die, it abideth alone: but if it die, it bringeth forth much fruit." Ahtaiyukhuk interpreted for me, and I was able to speak much more freely than usual. Mr. Krogh called my attention to a drunken man, whom he had observed through the window. Sara came from the herd.

October 22: 20° to 34°. Northeast and southeast; gale; snow. The storm prevented the children from attending, and made it in fact impossible to light a fire in the school room. As soon as it abated somewhat, in the afternoon, Sara returned to the herd. In the evening we felt two light shocks of earthquake. The natives are persuaded that it is of demoniac origin and presages some terrible calamity to the village. Most of them have discharged rifles in their houses to drive away the devil. Ahtaiyukhuk says that the old men tell of an earthquake which was followed by a winter of famine, and they fear a like catastrophe. Have been endeavoring to reassure them.

October 23: 32°. Northwest; snow all day. A dance this morning kept the children from school until 10.30, but the session was prolonged in the afternoon to make up for it.

October 24: 30°. West; clear and bright. Dance at Shuluk's house. Kahlo came from the camp; reports all well. Have allowed him to remain and repair his house.

October 25: 30°. Clear and calm. The boys are very much interested in learning to swing Indian clubs.

October 26: 30°. Clear and calm. Kahlo returned to the herd. His wife is constantly stealing things belonging to the other herders and refuses to do any work, so I have instructed him to send her back.

October 27: 30°. Clear and calm. Mr. Krogh and I have occupied most of the day in erecting the new stove. It suffered a great deal in transportation and was very rusty, so that we experienced considerable difficulty in putting it together.

October 28: 28°. Cloudy. Service in the morning. Explained to the people the cause of earthquakes; told them the story of the flood, drawing evangelical lessons. Am now able to speak much more freely and with more assurance that my meaning is gathered by the hearers, so that the attention is better than formerly.

October 29: 30° to 25°. Bright and calm.

October 30: 27°. Southeast; light clouds.

October 31: 23° to 29°. Southeast; violent snowstorms. Prepared November rations for the herders.

November 1: 30° to 32°. West; rain; violent storm.

November 2: 17° to 20°. Howling blizzard from the west. Attendance at school small in consequence.

November 3: 20° to 24°. Light snow. Sent November rations to herders, also lumber for tables and beds. Mr. Krogh accompanied them. Ahlonga died from acute miliary tuberculosis.

November 4: 27° to 30°. South; snow. Service in morning. Subject: "The Treasure Hid in the Field."

November 5: 30°. Calm; cloudy. Gave half rations to Betwinkhuk's and Aktokyak's mothers, also to Kahlo's children.

November 6: 24° to 16°. North; snow. Mr. Krogh returned from camp, having completed the tables and beds. It has been a wild day and he had a hard journey against the wind.

November 7: 13° to 23°. Southeast; cloudy. Very few children came when I rang the bell this morning, and after waiting a reasonable time I went on a still hunt and found them all down at the lake skating, where I administered collective and individual exhortations. Some of them were impressed sufficiently to leave their sport, but with a manifestly bad grace.

November 8: 34°. Southwest; misty.

November 9: 34°. Southwest; severe snow storm. The storm kept many of the children from school.

November 10: 26°. West; bright. Commenced breaking my dogs to the sled.

November 11: 32°. Severe snowstorm from 7 to 6. Rather a small attendance at church. Spoke of the two natures illustrated by the story of Isaac and Ishmael in fourth chapter of Galatians.

November 12: 30°. Cloudy; east. Observed Shuluk's family and connections engaged in the slaughter of a little puppy by hanging and stoning. The process seemed to afford them a great deal of satisfaction. I afterwards ascertained that the dog had been killed because it was sick. Had not previously known that they extended this ami-

able custom to the brute creation. Mr. Krogh saw another drunken man.

November 13: 34°. Southeast; cloudy. It has been so warm in the past week that pools of water are lying upon the ground. Mr. Krogh thinks that the tundra will be covered with a coating of ice, making it difficult for the deer to get food in the winter. Had a talk with the chief, Assoona, about the drunkenness, but he disclaims all knowledge of it. I am convinced that he had nothing to do with it, but am sorry I can not induce him to exert his authority to stop the making of whisky. Nongreylu, Assoona's son, has a severe chronic eczema, which I am treating. Savilla is also sick. Gave him medicine and food.

November 14: 32°. Clear and calm.

November 15: 34°. East; cloudy; light snow.

November 16: 34°. Calm and bright.

November 17: 30°. Takmadeluk, a Southwest Cape man, claims that his dog has been shot, and desires pay for it.

November 18: 30°. Southeast; violent gale. The wind made it impossible to keep a fire in the schoolroom, blowing the smoke and fire out into the room, so that we have been unable to hold service. Storm increased toward night with rain. Ahtakyak came from the camp to get medicine for Mrs. Sara.

November 19: 36°. The storm continued with rain all day, so that we could not make fire for school. Mr. Krogh built bookshelves. Oozuk's son is very sick; acute miliary tuberculosis. I have told him he has only a little while to live, and tried to point him to the "Lamb of God, which taketh away the sin of the world." He is afraid of death, and does not want to believe that he must die, but there is no hope for him. Gave him food, as he can not eat walrus meat and the unsavory native preparations.

November 20: 36°. The wind shifted a few points to the south and we were able to light a fire and have school. Storm continued all day. Visited the sick man after school. He was afraid to eat the food which I gave him yesterday, because he had heard that I had also given some to Ahlonga, who died, so I sent him some bread. He will not believe that his illness is to prove fatal.

November 21: 32°. East. Held an interesting session upon the roof to-day in an endeavor to make the chimney higher, which we hope will remedy the smoking. After a great deal of work we succeeded in putting in a new piece of clay pipe and surrounding it with zinc. Its workability remains to be demonstrated. Also brought some coal from the coal house to the shed.

November 22: 26°. Our efforts were not entirely successful, for the stove still smokes badly, but we were able to hold school to-day. I am much discouraged about the school; have urged, coaxed, and entreated

the children to come to school over and over again, but they much prefer skating. There was a very small attendance in the morning, and in the afternoon only three boys came. Had another talk with Assoona about it, and he promised to urge the men to send their boys to school; but I have spoken to him and others so frequently without any result that I fear nothing will come of it. Sepilla came from the camp. Mrs. Sara is better.

November 23: 26°. Bright and clear. The attendance at school somewhat improved, but I had to send some of the boys to the lake for children in the afternoon.

November 24: 27°. Northeast; cloudy. Washed clothes.

November 25: 26°. Northeast; cloudy. Service in morning. Assoona and Itaka are sick.

November 26: 23°. Northeast; cloudy.

November 27: 19°. Cloudy and calm.

November 28: 14°. Northeast; cloudy. For the language lesson this afternoon told the children a story and questioned them upon it.

November 29: 12°. Clear and calm. Two men captured a walrus to-day.

November 30: 18°. Light snow. Prepared December rations for herders to-day. Nine of the missing deer have been captured.

December 1: 15°. Clear and calm; snow during the night. Mr. Krogh accompanied the rations to the camp and returned. Sixty-two deer are now on hand. One was found dead this morning, presumably from falling upon the ice and injuring its head. The moss is covered with ice and they have great difficulty in obtaining food.

December 2: 17°. Violent snowstorm from northwest. There is young ice near the shore; soft and mushy, apparently formed in the water. Service in the morning. Subject: "The Children in the Fiery Furnace." Mr. Krogh and I observed the evening by prayer and reading of the Word.

December 3: 2°. Clear and calm.

December 4: 15°. Clear and calm. Borrowed Assoona's dogs and sled and paid a visit to the reindeer camp to see the house and how things are going. The house is about 22 by 12, and has separate rooms for the natives and Mr. Sara's family. Two doors open from the west side and two windows on the east. I find that Ayeyta and Kahlo stole several things when leaving the camp, particularly deerskins and seal-skins. I must have an interview with the gentlemen.

December 5: 20°. Southeast; cloudy; snow during night. Succeeded in inducing Kahlo to return the things which he stole from the camp. Ayeyta is absent from the village.

December 6: 23°. Southeast; cloudy. Mr. Sara came from the camp. A dog has badly bitten the foot of one of the deer.

December 7: 24°. Bright. Sara returned to the camp.

December 8: 15°. Northeast; bright. Brought coal from the coal house, and prepared lumber for transportation to the camp to finish ceiling the house.

December 9: 18°. Northeast; strong wind; cloudy. Service in morning. Spoke concerning the fall of man and the redemption through Christ.

December 10: 19°. Tremendous gale from northeast, with snow.

December 11: 18°. Storm continues.

December 12: 8°. Storm continues. Sewed up a deep wound in Savilla's arm. The ice is packed hard and the men are doing a little hunting in spite of the tremendous weather.

December 13: 4°. Still storming.

December 14: -2°. Storm continues. Many walrus and seal have been killed. The children were all busy to-day helping their parents and we were unable to hold school.

December 15: 5°. Storm rather less toward dark.

December 16: 8°. Northeast; light snow. Service in morning. Subject: "The two paths." Was called to see Qwittillon's boy. He has been suffering from acute miliary tuberculosis and was dying. I was able to give him a little temporary relief, but he died later in the afternoon. The direct cause of his death was cardiac failure, from acute emphysema. Shortly before death he presented extreme dyspnoea and a high degree of hyperresonance over the lung area. This is rather an unusual condition.

December 17: 8°. Calm and clear.

December 18: -5°. Calm and clear. So few boys presented themselves at school this morning that it became necessary for me to institute a search, which was quite successful.

December 19. 0°. Calm and cloudy. Betwinkhuk's father complains to-day that his food is all gone, and was kind enough to say that if I would give him a sack of flour he would refrain from "speaking bad" about me when the *Bear* comes. He is a cripple and can not hunt, but has a sick wife and two children, so I gave him some pease and bacon, although he had already received his customary allowance for the month. Otherwise it would be necessary for Betwinkhuk to leave the camp and go to hunting, and we could not get another so good a boy. Ahtakyak went to the camp with boards for ceiling the boys' room.

December 20: 2°. Northeast; clear.

December 21: -4°. Northeast; clear.

December 22: 9°. Northeast; clear. Commenced to prepare for Christmas.

December 23: -2°. Cloudy and calm. Christmas service in morning. Oozivushuk and Ogineskivapuk are sick.

December 24: Calm and cloudy. Spent almost all day preparing

for Christmas. Atluguk has influenza. Hope these cases are not the precursors of another epidemic.

December 25: 8°. Northeast; snow. Gave the children a Christmas dinner, and distributed magazines to those who have attended more faithfully.

December 26: 3°. Northeast. Scrubbed schoolroom. My patients are all much improved.

December 27: -2°. Northeast; snow.

December 28: 10° to 20°. Southwest; light clouds. Floe ice is moving rapidly in the strait.

December 29. Southeast; clear. Prepared January rations. Brought coal from coal house.

December 30: 24°. Clear; southeast; snow in evening. Service. Subject: "Nicodemus's conversation with Jesus." Betwinkhuk has influenza badly.

December 31: 32° to 35°. Snow changing to rain in the afternoon. South wind and mist. Spent a large part of the day cleaning the attic.

January 1, 1901: 32° to 35°. Storm continues. Mr. Krogh took rations to camp.

January 2: 35°. Rain; southwest. Am beginning to get my notes on the native language into shape.

January 3: 10°. Clear and calm. All the people from Southwest Cape have come to visit, and there has been dancing all day.

January 4: 10°. Calm and clear. Ice packed solidly in all directions. Etego's father got a large whitefish. Anagasook is very ill; visited her three times to-day and gave her medicine. Have still great difficulty in getting the children to school.

January 5: 10°. Misty and cloudy.

January 6: 20° to 24°. Southeast; cloudy. Service. Subject: "Jesus cleansing the temple." More of the people are sick. Anagasook is better.

January 7: 15° to 10°. Northeast; cloudy; snow.

January 8: -2°. Northeast; snow.

January 9: -5. Northeast; snow.

January 10: -8°. Northeast; clear. Cautioned Mr. Sara against eating the meat of the diseased deer without thorough cooking.

January 11: -8°. Clear and calm.

January 12: 6°. Northwest; cloudy. Wash day.

January 13: -6°. Calm and cloudy. Spoke to the people about "Judgment," describing the United States criminal court proceedings as illustrations. Rakok and Ifkowan's children now have influenza. Am visiting them daily with food and medicines.

January 14: -8° to -10°. Southwest; cloudy. Rakok is better.

January 15: -5°. Southwest; clear.

January 16: 0°. Cloudy; northeast.

January 17: -5°. Northeast; cloudy; wind increasing to a gale at night, with snow.

January 18: -4°. Northeast; cloudy.

January 19: -20°. Northeast. The ice is piling up on the beach.

January 20: -12°. Northeast. Last night the roof was blown from the wood shed, and we had the pleasure of assembling the débris in the cold this morning. Addressed the morning service on the "Confusion of tongues at Babel." Savilla's little girl died last night after only a few hours' illness. I did not see her, but from the symptoms which they gave me I should judge that she died of uræmic coma excited by the extreme cold upon a preexisting chronic nephritis, which may have escaped their attention.

January 21: -12°. Northeast. Have been too unwell to hold school to-day.

January 22: -22°. Northeast; bright and clear. Brought coal from the coal house.

January 23: -22°. Calm and clear. Mr. Sara and Mikkel came from the camp. Ahtagyak has been behaving badly, absenting himself from the camp for six days without permission. To-day Eruk reported to me Scevahuk's sudden death. They had not told me of his illness, so that I was unable to do anything for him. On going to the body, I found that he had died of smallpox. Another unmistakable case of the disease appeared this afternoon, and there are several others who appear to be in the first stages. Presume it was brought from Nome during the summer. Vaccinated Mr. Krogh and myself, and shall do the same for as many of the natives as possible to-morrow.

January 24: -10° to 0°. Northeast; clear. Vaccinated a large number of the natives to-day, until the vaccine was exhausted. It was nine months old and I am afraid it was spoiled; however, it will do no harm. Ahninga is much better and no new cases have appeared to-day. Three other people have the influenza.

January 25: -23°. Northeast; cloudy. The natives brought a shipwrecked white man, whom they found some 30 miles across the coast.

January 26: -25° to -20°. Calm and bright. Mr. William A. Egan tells the following story: The schooner *Halcyon*, 12 tons, left Cape Nome November 17 with cargo of provisions for starting a road house on the Alaskan coast, between Nome and Teller, Capt. Charles Thomas in command, Mr. Egan, owner, assisting in working the vessel. On the second day she got among the ice. Every breeze which came they endeavored to utilize for jamming a way through the ice, but met with no success, until finally the pack was so hard that further attempts would have only resulted in smashing the vessel. They were

now carried about with the ice by the different currents in more or less of a circle between this island and Nome, until January 8, when they came in sight of the headlands of Northeast Cape. By this time the schooner was so badly damaged by jamming as to render its further occupancy dangerous. Therefore the two men started for the shore hoping to find inhabitants. When about halfway there the captain decided to return for more provisions, while Mr. Egan kept on his way. They arranged that Mr. Egan should travel the north shore and the captain the south. When Mr. Egan got ashore he camped for the night. On the following day he resumed his journey, and from the top of the bluff saw the schooner and the captain returning to her. He then kept on along the north shore, sometimes upon the land but more often upon the ice, for the sake of the shelter from the wind which it offered, until he arrived at the wreck of the *Eacrett*, about 60 miles east of this place. Here he found the remains of a seal or whitefish and ate some of it. He had had nothing since coming ashore but three mice, which came to enjoy his camp fire. Having slept in the *Eacrett* over night, he left his gun there on account of being too weak to carry it and proceeded along the shore. About 20 miles farther he found a native underground house where there was also some seal meat, of which he ate, but was made sick by it. He stayed in this house two days, and finally the native to whom it belonged came and brought him to the village. The journey from the ship occupied seventeen days, for many times he lost his bearings and made wide detours upon the ice. When he arrived he was, of course, extremely weak from hunger, somewhat frozen as to the hands and feet, and had fever and a mild delirium. We fed and bathed him and put him to bed. Some men from Southwest Cape have gone along the southern shore toward the wreck and will look for the captain, but we fear he can not have survived. Have been working hard all day trying to induce some of the natives to go along the north shore, but they all refuse, saying that they are afraid of a northeaster coming and that they would probably never return alive. Finally, Rakok promised to go, but not alone, and as I can get none of the others to accompany him, I shall go myself in the morning.

January 27-29: -25° , -30° , -20° . Northeast. Early upon the morning of the 27th Rekok and I started along the north shore to search for Captain Thomas, returning yesterday. We went about 55 miles, but saw no traces of him. It was then late at night; and, on account of the extreme cold (about -30° or -35°) and a northeast wind which had risen, Rakok refused to go any farther. My nose was frozen, but otherwise I sustained no injury from the trip. It has been necessary to kill another deer on account of the foot disease.

January 30-31: -10° , -25° . Northeast. On January 30 I amputated three toes of Mr. Egan's right foot, under ether. Had great

difficulty on account of lack of proper instruments for the operation. When this was finished, was called to attend Mrs. Sara, who was about to be delivered of a child. Found all well; the little one is a girl. There was a strong northeast wind blowing, and the cold was most intense. My nose was frozen again, and I have been quite unwell to-day. Prepared February rations and sent them to the camp this morning.

February 1: -10° . Northeast; snow.

February 2: -20° . Violent northeast snowstorm. Mr. Egan is rapidly improving in health.

February 3: -15° . Southwest; much snow. Service in the morning. Parable of the lost sheep. We were glad of the addition of Mr. Egan to our little evening service. Dressed the amputation wound. It is doing well.

February 4: -10° . Northeast gale; snow. Storm was so severe that we could not hold school.

February 5: -7° . Northeast; cloudy.

February 6: -10° . Northeast; snow. The extremely severe weather kept the children from school.

February 7: -10° . Northeast; clear. Oozuk's son died yesterday of acute miliary tuberculosis.

February 8: -10° . Northeast; bright.

February 9: Northeast; clear.

February 10: 0° . Clear. Service in morning; subject, Hebrews 2:3. Many of the people are manifesting considerable interest and I am hopeful that the work will bear fruit before long.

February 11: -10° . Clear.

February 19: During the past week have been quite ill. The vaccine used January 24 took quite well with the natives, who, of course, had not been previously vaccinated, but not so with Mr. Krogh, who was vaccinated three years ago, or myself. I presume that the immunity given by my vaccination twenty years ago was still sufficiently strong to overcome the weak vaccine used the other day, but not strong enough to protect me from the disease, so that I have had a light attack of variola, or rather a severe attack of varioloid. Am now recovering, but am still very weak.

February 20: 32° . Southeast by east. Eguntunk and Shoonogeruk scrubbed the schoolroom floor.

February 22: 32° . Southeast by east; snow.

February 23: 34° to 24° . East. The boys washed the clothes.

February 24: 10° . Northeast; snow. Service in morning. Spoke about the Philippian jailor. Mr. Egan also addressed the meeting.

February 25: 10° . Northeast. Oozuk is observing what he calls a Messinga Sunday, lasting several days, during which he abstains from his ordinary work.

February 26: -15° . North. Endeavored to hold school this morning, but the storm was so severe that only a few of the boys came. I made another tour of the village, urging the parents to send their children to school.

February 27: 0° . Northeast; clear. School. The boys attended in force to-day.

February 28: -10° . Northeast; cloudy. School in morning. Prepared March rations in afternoon. Yesterday Dagimaka died, apparently from old age and influenza.

March 1: -3° . Northeast; clear. Sent March rations to the camp.

March 2: 0° . Northeast; clear.

March 3: 0° . Northeast; cloudy. A very large attendance at the service this morning. Spoke on the conversion of Saul of Tarsus.

March 4: -10° . Northeast.

March 5: 0° . Northeast.

March 6: -2° . Northeast.

March 7: -10° . Violent snowstorm from northeast. Very few children at school.

March 8: -5° .

March 9: 4° . Clear and calm. Saturday worked most of the day upon the language. Am trying to arrange a grammar and vocabulary for my successor.

March 10: 0° . Northeast. Spoke to the people about Paul's sermon at Mars Hill; particularly in reference to the offering of sacrifices. Explained to them that God had at one time required sacrifices and burnt offerings of men, but when Christ came He "offered one sacrifice for sins forever," and there remains no necessity for further sacrifice. Some of the people were quite pleased with this view of the gospel, and I believe that their hearts are strongly drawn to God. Others, however, showed considerable antagonism, and desire to cling to the customs of the "first men."

March 11: -10° . Northeast; cloudy.

March 12: -15° . Stormy.

March 13: 0° . Northeast.

March 14: 0° . Northeast.

March 15: 0° . Northeast.

March 16: 0° . North. Worked on the language.

March 17: -5° . Had a most interesting meeting. Mr. Egan also addressed the people, and considerable interest was manifested.

March 18: -10° . North. Mr. Egan cooked some seal meat, which was quite good.

March 19: -10° . Northeast.

March 20: 5° . Northeast.

March 21: 10° . North; cloudy.

March 22: 10° . North; cloudy. Mr. Egan has a severe attack of asthma.

March 23: 10°. Northeast; snow.

March 24: 15°. Northeast; snow. Service. Subject: David and Goliath. I feel that the people are being prepared for an outpouring of the Spirit of God.

March 25: 15°. Calm and cloudy.

March 26: 5°. Northeast; snow.

March 27: 10°. Northeast; snow.

March 28: 10°. Northeast; cloudy.

March 29: 15°. North; bright and clear.

March 30: 16°. Northwest. Prepared April rations for the herders. The thermometer went up to 50° in the sun.

March 31: 20°. Southwest; snow. A large expanse of open water. Three canoes went out and two walruses were captured. Service in the morning. Subject: Forgiveness.

April 1: Held a short session of school and distributed to the more regular scholars. Made case for the drugs. Sent April rations to the camp.

April 2: 25°. Southwest; clear and bright. Finished medicine case. Massaiyns's little boy died. He had tuberculosis a long time.

April 3: 20°. Clear and calm. Studied the Eskimo language and worked upon grammar.

April 4: 15°. Clear and bright; northeast. Commenced house cleaning. Worked on language.

April 5: Bright and calm. House cleaning and fixing locks. Hired Nuchan to shovel the snow from the woodhouse, so that we may fix the roof.

April 6: 15°. Northeast; cloudy; snow. Worked upon school report and native vocabulary. There is a scarcity of food in the village. The weather and ice have not been favorable to hunting in some time. The snow is now softer and the deer have less difficulty in finding food.

April 7: 5°. Northeast; violent gale; snow. Small attendance at the service. Spoke of the manna in the wilderness.

April 8: 10°. Northeast; driving snow. Washed clothes. The people have little food.

April 9: 15°. Northeast; bright and clear. Large expanse of open water. A number of seals were captured to-day.

April 10: 20°. Northeast; bright and clear. We replaced the roof of the woodhouse, which was blown off some time ago. Angakha died to-day. He had been sick for a long time with miliary tuberculosis, with which he was infected, during an attack of influenza, from the mother, who is a chronic tuberculosis patient. I treated him for a long time both with medicine and by prepared foods, but was unable to do more than relieve the more distressing symptoms. He was a good boy, about 9 or 10 years old, and I am confident loved Jesus

as well as his understanding permitted. A large walrus was killed to-day.

April 11: 20°. Northeast; snow. Worked on grammar and dictionary.

April 12: 8°. North; snow. Worked on dictionary.

April 13: 26°. Northwest; bright and clear. Started to clean the storehouse and worked up accounts

April 14: 24°. Southwest; cloudy. Service in morning. Subject, The Resurrection. Think the people got a clearer idea of the purpose and results of Resurrection than they had had before.

April 15: 32°. Northwest; cloudy; snow. Allowed Kowarra to put skins upon the frame of his canoe in the schoolroom. Worked upon language.

April 16: 27°. Northwest; bright. Except for small pieces of ice the sea is clear for a great distance. Worked on dictionary. Cleaned schoolroom locker and the back shed.

April 17: 32°. West; cloudy. Vocabulary.

April 18: 34°. Warm west wind; snow. The ice has all gone except along the shore. Cleaned the garret. Worked on language.

April 19: 30°. Calm and bright; northwest. Vocabulary and grammar.

April 20: 26°. Calm and bright. Cleaned schoolroom.

April 21: 10°. East and southeast; violent gale with snow. Service in morning. Mr. Sara came from the camp, reporting that two of his children had been bitten by a dog. Made a trip to the camp and found that the bites were the merest possible scratches and that the dog was quite healthy. Cauterized the wounds and returned. The gale was very severe and for a long time I was lost upon the mountains, as the driving snow obliterated every trace of the trail and the heavy mist made it impossible to see more than a few feet. Finally arrived home considerably after dark, quite used up.

April 22: 34°. Light south breeze; dark and gloomy. To-day the whaleboats were launched, the ice having all given way before the east wind. A number of walruses were captured.

April 23: 30°. South; open water in all directions. Ten whaleboats hunting. Finished cleaning the garret.

April 24: 36°. Calm and cloudy. Commenced repairing paint on front of house.

April 25: 40°. Calm and cloudy; snow rapidly thawing. A bear and cub were shot; Tumkaras divided the skin among the people, cutting it into small pieces. Cleaned the shed adjoining the schoolroom.

April 26: 42°. West; cloudy; snow. Language.

April 27: 30°. Cloudy. Have been too unwell to do much of anything to-day. Worked a little upon the language.

April 28: 25°. Bright. Unable to hold service to-day on account

of sore throat and being generally under the weather. Six deer have fawned.

April 29: 24°. Calm and cloudy. Worked all day upon grammar. Am feeling a little better.

April 30: 20°. Clear and calm. Ice has come heavily packed. Prepared May rations for herders.

May 1: 22°. North; bright. Sent rations to camp. Worked on language. A fawn born dead.

May 2: 28°. Clear and calm. Raised flagstaff. Worked upon vocabulary.

May 3: 15°. North; cloudy. Language.

May 4: 25°. North; cloudy. Language. Two boats (Shoolook's and Umwahluk's) were caught by the ice and unable to get free. They will have to remain out until to-morrow.

May 5: 28°. North; bright and clear. The boats returned safely. Service in the morning.

May 6: 20°. Northwest; snow. Worked on language. Ifkowan's daughter died of miliary tuberculosis.

May 7: 22°. North; bright. Took census of village.

May 8: 34°. Clear and calm. Scrubbed paint and woodwork in the bedroom. A bark passed.

May 9: 40°. North. Scrubbed paint in sitting room. Kowarra got a whale.

May 10: 30°. Northwest; cloudy. A boat arrived from Indian Point this morning. In the afternoon Nuchon was intoxicated and ran around the village naked from the waist up, shouting and raving. I took him home with the aid of Rakok and Uzivushuk and gave him an opiate. Natives are very dangerous when they are drunk, and I feared he would cause trouble. As it was, he attacked Ifkowan, who knocked him down and jumped on his head. I severely reprimanded the Indian Point men for bringing whisky and ordered them to go back home as soon as the ice permitted. They denied bringing liquor and asserted that it was made by our natives. This, however, is not true, as our people had nothing from which to make it, and the coincidence of their arrival is too great. Gittugaita's wife died of long-standing tuberculosis.

May 11: 36°. West. The Indian Point natives came to see me to-day, anxious for a reconciliation. They still disclaim having brought whisky, but in such mild fashion as to be almost a confession. I told them that we desired to be friends to them as well as to our own natives; that it was a good thing for them to come and trade, but that I would under no circumstances tolerate the trading of whisky. Their spokesman said he had "felt bad in his head" for a long time last night after I had spoken to them. He promised to tell all his people what I had said, and I am satisfied that they are pretty well frightened and will think twice before bringing any more whisky.

May 12 and 13: Sunday. 32°. Service in morning. The *Belvidere* came in the evening and I went off to her in Ifkowan's canoe. Had great difficulty getting through the ice. Quite a dangerous trip. The *Belvidere* has caught five whales. Reports open to the west along the Siberian coast. Says that the rest of the fleet came by the eastern route and are held back by the ice which is massed to the southeast of the island. Did not get home until 4 this morning on account of the ice. Cleaned the kitchen chimney.

May 14: 26°. West. Worked on language. Another boat came from Indian Point.

May 15: 30°. Calm and cloudy. During the night the *Jeanette*, Captain North, came, leaving soon after dawn. Assoona, the chief, tells me that the Indian Point chief had sent him a message requiring him to pay tribute, in default of which he will make an attack upon the village and kill him. I assured Assoona that we will assist in protecting the village and ask the captain of the revenue cutter to attend to the matter when he comes.

May 16: 26°. North. Worked all day on language.

May 17: 25°. North. Worked on language.

May 18: 25°. Southwest by south; cloudy and snow. Wash day.

May 19: 34°. Southwest by south; foggy. Much drifting ice. Service in morning. Most of the men away hunting. Ahninga and his father, Gittugaits, seem to be very much softened by the death of Angakha and his mother. Had a talk with Ahninga to-day about them. He seems really to trust them to Jesus and to live in the hope of seeing them again. He was very sad. "Big house," he said, "all quiet, nobody in it."

May 20: 30°. Southwest; foggy. Language. A reindeer died of foot disease.

May 21: 35°. Southwest; clear. Vessel in sight almost all day, but unable to come in on account of the ice.

May 22: 25°. Northeast; cloudy. Ice constantly moving in and out.

May 23: 30°. West; bright. Worked on language. Kowarra killed another whale.

May 24: 35°. Calm and clear. Mr. Sara came from the camp. Twenty-five deer have been born. Three born dead and one died subsequently from imperforate urethra.

May 25: 40°. Clear and calm; west wind all night; snow thawing rapidly.

May 26: 28°. Foggy; west. Related the chief events in the life of Jesus for the benefit of the Plover Bay men who were at the service this morning. Aguchky got a whale.

May 27: 40°. Foggy. Cleaned out the cellar of the storehouse.

May 28: 40°. Foggy. At work in the storehouse and on report.

May 29: 28°. Northeast; foggy.

May 30: 30°. Northeast by north.

May 31: 36°. Northeast and northwest; clear. Kumeyarus's sister died of tuberculosis. The bark *Fearless* came to anchor. Brought me some letters from Unalaska. Captain McKenna has promised to do all he can to prevent his men from trading whisky here, although he makes no bones about acknowledging that he has plenty of it for trade upon the Siberian coast. Put up June rations for herders.

June 1: 44°. Northwest; clear and bright. The *Fearless* is trading largely. Sent June rations to camp. My letters bring news that my mother is ill, and I certainly must go home.

June 2: 39°. Clear and calm. The *Fearless* left yesterday without getting any of our natives intoxicated. The *Belvidere* came to-day.

June 3: 35°. West; heavy mist and rain. The *Belvidere* left this afternoon. The captain said he had no whisky, but, nevertheless, two natives were drunk. This occurred also the last time he was here.

June 4: 35°. West; misty.

June 5: 35°. Southwest; misty. A large passenger steamer passed going south. Three boats came from Indian Point, bringing Mr. Waldmar Bogoras, a member of the Jessup expedition.

June 6: 35°. Southwest; misty. Assisted Mr. Bogoras in investigating the language, manners, and customs of the natives. The steam brig *Grampus* came. Captain Porter brought me two letters. She left in the afternoon for the Diomedes.

June 7: 40°. Southwest; misty; rain.

June 8: 36°. Southwest; misty; rain.

June 9: 36°. Southwest; misty. Service in the morning. Mr. Bogoras very kindly assisted me.

June 10: 36°. Southwest; bright. Mr. Bogoras and the Indian Point men left for Indian Point.

June 11: 40°. Southwest. Two boats arrived this morning with a letter from Captain Leavitt of the steam whaler *Balaena*. She is wrecked near Southeast Cape, having run upon a reef in a fog June 9. She is badly broken and not seaworthy. The crew are camping on the beach. The *Alexander* came in during the morning. We went aboard and notified the captain of the wreck, and he has gone to see what he can do for them.

June 12: 40°. West; clear.

June 13: 34°. West; misty; clear about noon. Took some pictures.

June 14: 32°. Northeast; cloudy. A barkentine passed south in the offing.

June 15: 32°. Northeast; cloudy and misty. Worked on report.

June 16: 45°. Clear; northeast. Service in morning, subject: Watchfulness.

June 19. Went around Southwest Cape to the wreck of the *Balaena*. Provisions and crew taken on board the *Alexander* and the wreck burned.

June 23: Returned to Sivukuk. Six deer have been born in the past week, one born dead. Mr. Egan went ashore and will wait for the arrival of the *Bear*. Obtained 1 slab of bacon and 30 pounds of sugar from Captain Tilton to complete July rations for the herders. Left for Cape Nome on board *Alexander*. Mr. Krogh remained in charge of the station.

ANNUAL REPORT NORWEGIAN EVANGELICAL LUTHERAN MISSION
HERD, TELLER STATION.

TELLER REINDEER STATION, ALASKA, *July 1, 1901.*

Dr. SHELDON JACKSON,

General Agent of Education for Alaska.

HONORED SIR: When arriving at the station, June 30, 1900, and taking immediate charge, affairs at the herd were found in a precarious condition. The then prevailing epidemic of measles and pneumonia had also sought its victims among the native deermen in charge of the herd. Wocksock, son, and daughter died about our arrival. Mrs. Wocksock and only living son came in sick soon after; the mother died a few days later. Tautook's wife, mother, sister, and brother were dead, or died some days afterwards. Sekeoglook lost his wife and child. Dunnak lost wife, child, and sister, and all but Dunnak had left the herd, sick or tending their sick family. Dunnak was also getting sick and the herd about to disperse, when men were sent up from the station and the herd kept intact. The buildings were found in a better condition than expected, but the filth accumulated by white trespassers was beyond expectation and defies description.

During the winter the herd was kept partly on north side of Grantly Harbor and after New Year, until the 1st of June, on the Ah-gee-o-puk around the old winter quarters. In June it was started in easy stages toward the chosen summer ground, 7 miles northwest from the station on the lagoon, where it is now encamped remote from the general course of travel.

The herd was not divided as proposed, because the many prospectors and hunters traveling over the country made a strict watch necessary, and one herd could be easier controlled than many. According to instructions, I delivered to Captain Tuttle, commanding the *Bear*, 15 male and 30 female deer, to be landed at St. Lawrence Island, that being the number the captain was willing to take. Dunnack also received 19 male and 31 female deer, and the Norwegian Evangelical Lutheran Synod of North America's Mission station at Teller Reindeer Station, 25 male and 75 female deer. In the fall the common hoof and joint disease caused the loss of some, but during the winter and spring we have been free from all sickness among the deer.

The native deermen have been faithful with the herd since recovering from their sickness, with the exception of Sekeoglook, who has

been away from the herd the greater part of the winter without any valid excuse given, keeping a boy at the herd to look after his deer. Per Larsen Anti has been with the herd all fall and spring. During the winter he made a trip to Shismareff Inlet, Arctic Ocean, and during February, March, and April he was with Dr. J. Bevans, Army surgeon, at Fort Davis, with 5 deer to Kotzebue Sound on an expedition to investigate the condition of the natives in that region and around Nome, and came near causing the death of 5 deer from starvation. Unless drastic measures are taken this season, and immediately against burning the tundra in this region, it will be burned and the reindeer industry entirely ruined.

The death of native owners of herds has raised the question of inheritance, and showed the danger of herds falling into the hands of schemers or natives not fitted to assume charge of a herd. The superintendents of herds and the general superintendent of stations in Alaska should meet with you and devise some plan by which, in case of death, the herd could be kept in proper hands.

In March Dr. Gambell, from Eaton Reindeer Station, general superintendent of stations in Alaska, visited the station on his trip of inspection, and in January, Dr. J. Bevans, assistant surgeon of the United States Army, and party, stayed some days with us; also Mr. and Mrs. Lopp paid us a visit in January, and Mr. W. T. Lopp again in March. Miners and prospectors have been passing to and fro all winter, a few acting roughly.

During the epidemic last summer 45 natives were fed for some time, and for 32 food was prepared and the sick looked after for six weeks before any Government aid was sent in. In the near vicinity about 30 died. I buried 20 in all that died in the buildings or in tents pitched around the buildings for sick natives. Many orphans were left. The mission took in 12 orphans, 2 widows, each with a child, and 3 young men, which have been cared for. Ten orphans and the 3 young men are yet with us, the 3 latter being employed as apprentices. The widows have left us, 1 to marry a native, the other to stay with an uncle.

School was kept from the beginning of September to the end of May, and as the pupils were all in the building the attendance was regular and progress was marked. One hundred and eighty days' school was taught with an average daily attendance of 16. Besides the regular studies the girls have been taught sewing and housekeeping, and the boys had their regular hours of work every day, and all have done their best to do their duties.

The natives have fared well this winter; tomcod and seal at times in abundance. A few cases of sickness have appeared among them. A few may at times have been pressed for food, but in every case caused by indolence and intemperance. With but few exceptions the

natives in this region have all been drinking, and some have bartered away their last morsel of food and their clothing for whisky, being able to procure all they could pay for from saloons and private parties. About 600 sacks of flour, 1,500 pounds navy bread, 1,500 pounds bacon, and 1,200 pounds sugar have been distributed among the natives either as a gift, pay for work, or in barter, besides some canned meat, milk, and considerable clothing.

December 4, 1900, Kahwan, an orphan at the station, died, and April 21, 1901, Na-zoo-kuk, a brother, died, both brothers of Tautook. March 25, 1901, Thelma Marie Brevig was born and baptized April 25. Johan Tornensis has been sickly since New Year's, and often not able to be on duty.

During the winter the apprentices had considerable exercise in driving, principally between camp and the station, and hauling wood, but also made longer trips with freighting trains; and in this connection I would especially mention Kozetuk, a young man or boy about 17 years old, the youngest of the 3 mission apprentices. In May he, with Johan Tornensis, took a train of 18 loaded sleds to Tuttle Creek, on the Arctic slope, about 65 miles from the station, Kozetuk driving a string of 5 deer with loaded sleds, the last 4 being tied to the preceding sled. From there he alone took 2 harnessed deer with sleds and 10 loose deer to Mr. Lopp's herd, 45 miles distant, returning to camp, and in a week taking 10 more deer to Mr. Lopp's herd. Returning to camp on June 1, he started for the station with 4 deer and 8 empty sleds during the worst possible condition of travel, the snow melting and rivers opening, arriving at the station June 4, without accident and the deer in good condition, having traveled 245 miles with a string of deer, and all alone, showing that natives can learn to handle deer. This is his first year's apprenticeship.

Respectfully,

T. L. BREVIG,
Teacher and Superintendent.

Report of deer died or killed.

Date.	Owner.	Male.	Female.	Cause of death.
1900.				
July 31	Government.....	1	.....	Foot rot.
Aug. 17	.....do.....	.....	1	Do.
Aug. 27	.....do.....	.....	1	Do.
Aug. 30	Tautook.....	.....	1	Do.
Do..	Wocksock.....	.....	1	Do.
Sept. 2	.....do.....	.....	1	Do.
Sept. 19	Government.....	.....	1	Do.
Sept. 29	.....do.....	3	.....	Do.
Do..	Skeoglook.....	1	.....	Do.
Do..	Mission.....	.....	1	Do.
Oct. 8	.....do.....	1	1	Heart disease.
Do..	Tautook.....	1	1	Foot rot.
Oct. 12	Mission.....	2	.....	Do.
Oct. 22	Wocksock.....	1	.....	Do.
Nov. 1	Tautook.....	1	1	Do.
Nov. 8	Government.....	2	.....	Do.
Nov. 15	.....do.....	2	.....	Do.

Report of deer died or killed.

Date.	Owner.	Male.	Female.	Cause of death.
1900.				
Nov. 23	Sekeoglook.....	1	1	Killed for food; old and barren.
Do..	Tautook.....	2	1	Foot rot.
Do..	Dunnak.....		1	Killed for food.
Nov. 28	Tautook.....	1		Foot rot.
Dec. 14	Mission.....	1		Killed for food.
Dec. 21	Wocksock.....	1		Foot rot.
Dec. 28	Mission.....		1	Killed for food; broken hip joint.
1901.				
Jan. 12	Tautook.....		1	Killed for food.
Jan. 15	Dunnak.....	1		Do.
Jan. 31	Mission.....	1		Strangled in breaking.
Do..	Sekeoglook.....		1	Killed for food.
Feb. 1	Wocksock.....	1		Killed by dogs on trip.
Feb. 14	Tautook.....		1	Found dead near herd.
Feb. 21	Mission.....		1	Broken back.
Do..	Wocksock.....	1		Died during the night while tethered.
Mar. 7	Sekeoglook.....	1		Killed for food.
Mar. 13	Dunnak.....	1		Strangled in training.
Mar. 26	Sekeoglook.....	1		Killed for food.
Mar. 28	Tautook.....	1		Do.
Apr. 12	do.....	1		Internal disease.
Apr. 25	Sekeoglook.....	1		Killed for food.
Do..	do.....		1	Died in fawning.
	Total.....	31	22	

Fawns born, season of 1901.

	Born.	Died.	Living.
Government.....	28	3	25
Dunnak.....	25	3	22
Mission.....	62	6	56
Wocksock.....	42	5	37
Tautook.....	52	9	43
Sekeoglook.....	35	5	30
Total.....	244	31	213

The following apprentices were employed at Teller Station by the Mission and by the native herders: Coxrook, Kozetuk, and Serawlook, employed by Mission; Erlingnuk, employed by Sekeoglook; Ahmukdoolik, employed by Tautook; Nunahzarlook and Bahsuk, employed by Dunnak.

TELLER, ALASKA, *October 14, 1901.*

SHELDON JACKSON, *Washington, D. C.*

DEAR SIR: Have made several visits to the herd and find things improving, but some deer are yet very sick and may succumb. Nels and Alfred have been busy making sleds and harness. Dunnak came in from a fishing trip lately and reports but little tundra burned in the lake region, with the exception of the Coogrook River, and plenty of good feeding ground. He had made some trips to investigate this. Natives had told him that on the other side of the divide toward Golovin Bay the whole region was burned, and as this is the territory we must pass through with the herd I have decided to send a Lapp and

either Tautook or Dunnak to investigate before I dare to send the herd, as lack of food for three or four days might cause the loss of many deer.

I have taken in two orphans, a boy and a girl, since I last wrote and I expect two more boys soon. We have now 14 children and 5 herders, in all 43 people connected with the station. Sekeoglook was married a short time ago, and Coxrook, one of my herders, was married yesterday to Tautook's cousin (both married in native style). Dr. Mecheam told me the other day that Mrs. Scroggs was giving satisfaction as a teacher. Dr. Mecheam's son went out on the last trip of the *Kimball*. The news from the creeks is discouraging and nearly everybody has left the creeks. Tautook's brother died last Wednesday leaving Tautook sole survivor of a large family.

All are well and send their greetings.

Vary respectfully, yours,

T. L. BREVIG.

ANNUAL REPORT OF CONGREGATIONAL MISSION REINDEER HERD.

CAPE PRINCE OF WALES, *July 4, 1901.*

DR. SHELDON JACKSON,

General Agent of Education for Alaska, Washington, D. C.

DEAR SIR: We hereby submit our report of the Cape Prince of Wales herd for the year ending June 30, 1901.

The winter has been a severe one. More snow has fallen than we have ever observed in any former winter. On January 1 a southerly wind brought rain, causing the snow to thaw. The freezing weather which followed froze this into a solid sheet of ice, encasing the moss in such a way that it was impossible for deer to get feed within 18 miles of the Cape. Fortunately our herd was about 38 miles northeast of here, where the ice crust formed was so thin that it did not interfere with grazing. Just across the strait, in the region of St. Lawrence Bay, Siberia, entire herds perished from the effect of this rain and thaw.

In June and July our herders were taken with measles, complicated with bronchial trouble, which disabled them for weeks and kept them weak all summer and fall. Sickness in the village at the same time made it very difficult to get natives to assist in herding. September and October were unusually rainy and stormy months.

The mission had hoped to pay this year's expenses for sleds, harness, food, and clothing for herders, etc., by hauling; but money seemed so scarce at Teller that we were unable to get any cash contracts. However, by giving time, we were able to get contracts to the amount of \$600. For some cause or other there seems to be a prejudice against reindeer. But the people we have hauled for seem so well satisfied

with them that we think there will be a greater demand for them next year.

The birch sled and harness timber which Superintendent Gambell sent us from Eaton Station last summer was highly appreciated by our herders. It is impossible to get suitable sled and harness timber on the beach.

During the year 75 deer have been killed for clothing and meat and 33 have died from disease and accident. Of the 276 fawns born, 48 died of desertion, freezing, and "still born," leaving 228 living fawns. The herd now contains 993.

Superintendent Gambell visited and inspected our herd in March.

Very truly,

W. T. LOPP,
Superintendent in Charge.

ANNUAL REPORT PRESBYTERIAN MISSION HERD, POINT BARROW.

POINT BARROW, ALASKA, *August 1, 1901.*

REV. SHELDON JACKSON, D. D.,

General Agent of Education in Alaska, United States.

DEAR SIR: In accordance with your request dated April 27, 1901, I have the honor to submit the following report regarding the deer left here in my charge by Dr. Marsh in August, 1900:

Total number of deer August 1, 1901.....	227
Number of deer belonging to Government.....	100
Number of deer belonging to mission	85
Number of deer belonging to Ojello.....	42

The number of deer killed and died for the year is: Ojello, 3; Government and mission, 5; total, 8. The several causes of death are as follows:

Ojello's herd.—Two males were killed last fall for skins—this after consultation with *Bear* officers and myself. It was thought that as the destruction was of males only it was warranted, it being also a case of need and the increase not being lessened. One female died this spring while fawning, the fawn not being properly delivered.

Government and mission.—August 24, 1900, one female died from some internal derangement, existing since its previous fawning. November 6, 1900, one fawn, an internal trouble, something of an ulceration of the bowels. December 15, 1900, one male killed by dog. February 16, 1901, one female sick from time of its arrival here, in 1897-98; disease unknown.

There is now at the herd another deer, lame, appearing to be a sort of paralysis; it seems it must eventually die.

As to the number of deer left here August 15, 1900, Dr. Marsh in

his memorandum to me reported 147. After his departure I counted to verify, but could not do so. Repeated countings would give but 145. Dr. Marsh's count may have been out by two. His report, I believe, dates July 1. If so, this would account for one, which was butchered by him when the first ships arrived at the end of July. The other deer is probably a miscount. To count them is far from easy, and a mistake could easily creep in.

I have reckoned the original 100 deer as belonging to the Government, the increase (not yet assigned to apprentices) as belonging to the mission.

I can not understand any reason why so many fawns died this year. The storms were not severe, and many were born in fine weather. Yet out of 71 possibilities in the Government and mission herd, but 45 lived—63 per cent as against 74 per cent last year. There may be no assignable reason, the percentage must vary from year to year, and this may be bordering on the lower limit.

The deer herd has been located about 25 miles below here, and has kept in good condition. Another winter they will have to move, probably inland, and come to the shore during the whaling and sealing seasons, reserving the shore pasturage especially for this purpose. Seal, walrus, and whale must be depended on many years yet as the staple diet, and it is necessary that a shore pasturage be kept, so that the herd can be brought along with the herders, and tended there by part of the herders while the other part hunts.

The Eskimos all prize the presence of the deer, the gradual diminution of the whaling vessels foretelling them of a time when they must provision themselves from their own larders, and not from the ships, which in time will come no more.

The trained deer have done only local traveling, for the reason that no opportunity has arisen.

During the past year one of the apprentices died from pneumonia. We had him brought from the village, where he was taken sick, to the mission house, but he died here in our rooms, in spite of all I did for him.

Trusting this report may reach you safely, I am,

Very respectfully, yours,

SAMUEL R. SPRIGGS.

P. S.—The Government property consists of one flag, one stove, and sundry school supplies, as readers, arithmetics, geographies, histories, physiologies, slates, crayons, and a globe.

S. R. S.

EXPEDITION TO SIBERIA.

REPORT OF LIEUT. E. P. BERTHOLF, REVENUE-CUTTER SERVICE.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
Washington, D. C., December 4, 1901.

Hon. W. T. HARRIS,

Commissioner of Education, Washington, D. C.

SIR: In accordance with the instructions contained in your order dated January 3, 1901, I left this city on the 11th, and, taking passage from New York on the North German Lloyd steamship *Trave*, reached Southampton, England, the 23d. Thence I proceeded to St. Petersburg, Russia, via Havre and Paris, reaching that city February 4, and the following day presented myself and letters to the ambassador. He had already been informed by the State Department of my projected trip and had been requested to procure from the Russian Government such letters, etc., as would facilitate my efforts, but had decided to await my arrival before proceeding in the matter. I therefore explained fully the nature of my mission, and the necessity for my speedy departure from St. Petersburg in order to reach my destination, for the winter was already well advanced. The ambassador thereupon communicated with the authorities, but owing to the usual delays in such matters it was not until February 20 I was informed by the ambassador that the Russian Government had issued the necessary instructions to the various officers of eastern Siberia to facilitate my passage and mission, and I was at liberty to depart.

Meanwhile I had made inquiries at the departments concerning the reindeer herds in eastern Siberia, and was informed there were no large herds south of the Gishega region. That region was, therefore, my objective point, and unless I could reach there by the winter route it appeared to me inadvisable to set out during the winter. As I had informed myself at the post-office department regarding times and distances, I saw it would be impossible to reach Gishega before the rivers became impassable, and on February 20 cabled the Department to that effect, advising going to Vladivostok and taking the first steamer to the Okhotsk Sea. My letter of the same date, confirming this telegram, explained fully the situation.

Having received your cable on the 23d, however, directing me to proceed in any case, I left St. Petersburg February 24 for Moscow, arriving the 25th, having engaged as interpreter Mr. W. S. Smith, an American residing in Russia, at a salary of 200 rubles per month and necessary expenses, including transportation back to St. Petersburg at the termination of his employment. February 27 we left Moscow on one of the biweekly trains over the trans-Siberian railroad and reached Irkutsk March 8. We were met at the station by the chief of police of Irkutsk, who had been directed by the governor-general to look out for us. This officer at once proffered his service and advice in procuring the necessary outfit for the post travel, and it was mainly through his energy and experience that we were not unduly delayed. The following day, March 9, I paid my respects to the governor-general at Irkutsk, who informed me that he had already sent instructions along the line to Yakutsk and would furnish me with an open order to all posts which would prevent any unnecessary delays, and that the governor at Yakutsk would attend to the route farther on.

All along the route I found it the same, the governor at Yakutsk and all the officials in the various towns doing everything in their power to facilitate our progress and to obtain what information I needed concerning my errand. The next day being Sunday, nothing could be done. Monday and Tuesday were spent in getting together our necessary outfit and provisions, and with the kind assistance of Colonel Nikolsky, the chief of police, we were enabled to complete all preparations by Tuesday night.

In order to avoid the delay in changing sleds and shifting provisions and baggage at each post station, a second-hand pavoska, or winter traveling sled, large enough for two persons, was purchased and put in repair. This is a heavy, strongly built wooden sled, partially covered with a sort of carriage top, and is long enough for the occupants to lie at full length. The front end, being also covered, furnishes a seat for the driver as well as protection for the traveler. The inside is completely lined with thick felt to keep out the wind, and a felt apron is fitted which buttons over and closes up the face of the sled top, so in case of snowstorms or head winds the traveler can be entirely shut in and protected.

The sled runners are very close together, but to prevent the pavoska from capsizing on uneven roads a stout outrigger is fitted on each side, the forward ends being bolted close in to the head of the sled, and the other ends spread out and secured with cross pieces at the back of the pavoska. This brings the after ends of the outriggers some 3 feet outside the sled runners and about a foot above them. These outriggers, taking on the road when the pavoska is thrown out of the vertical, prevent any further inclination and the sled soon rights itself. On the back of the pavoska is strapped the provision

box. For our clothing, etc., a chemodan, or small, flat, and practically water-tight leather trunk, was purchased. This fitted in the bottom of the pavoska and answered also for a seat. Plenty of straw in the bottom of the sled, two mattresses on top of the straw, pillows, and a double sheepskin blanket completed the pavoska outfit.

Our fur clothing consisted of a shuba or great coat of winter deer-skins (lined with squirrel skins and fitted with a big collar), a pair of deerskin boots, felt boots, gloves, and cap for each of us. Our camp outfit consisted of a rifle, shotgun, ammunition, a cooking pot, and a strong, compact, Russian traveling basket, containing two each of knives, forks, spoons, cups, and plates, together with teakettle and receptacles for sugar, tea, coffee, salt, and pepper.

As nothing in the way of food can be procured at the different post stations, food must be carried in the pavoska, and our supply consisted of sugar, tea, coffee, butter, hard bread, canned and dried meats, soup prepared and frozen in cakes of a convenient size, and "pelmenia," the last two being the principal articles of food. The "pelmenia" are small balls of cooked meat rolled in dough and frozen, and we found this frozen soup and "pelmenia" most excellent and convenient for traveling. You simply have to put a cake of frozen soup and some "pelmenia" in a pot, hang it over a fire, and by the time the soup is melted and comes to a boil it is ready. Half an hour is quite sufficient to prepare and eat a meal of this sort.

FROM IRKUTSK TO YAKUTSK.

All preparations being completed by Tuesday night, and having paid my parting respects to the governor-general, we left Irkutsk 9 o'clock Wednesday morning, March 13, being escorted to the first post station beyond by a police officer, detailed for the purpose by the obliging and courteous chief of police. As I was carrying a considerable sum of money on my person, my interpreter and myself were each provided with a revolver and belt, and it speaks well for the condition of eastern Siberia that we never had the slightest use for them in all our travel.

The severe part of the winter had passed, and at the time of our departure from Irkutsk the thermometer was only 20° F. during the day and -2° at night. As we proceeded farther toward Yakutsk, which is reputed to be the coldest part of Siberia, the weather of course got a little colder, but the lowest thermometer we had on the entire trip was -24° one night on the road to Yakutsk.

Leaving Irkutsk our route took us across a gentle rolling country, with occasional hills, for the first eleven stations, to Verkolinsk, where we struck the Lena River. The day before we started the biweekly mail left Irkutsk, and as this generally uses all the horses at the different stations between Irkutsk and Verkolinsk, the chief of police

very kindly had detailed an *ispravnik* (who corresponds to our sergeant-of police) to escort us to the first station beyond Irkutsk. At the first station this *ispravnik* was replaced by the local *ispravnik*, who went to the next station, and so on, so that we had a police escort for the eleven stations until we reached Verkolinsk, after which we found the horses were more plentiful at the post stations.

This was very thoughtful on Colonel Nikolsky's part and I felt very grateful to him, as it saved us much time, for at most of these stations the post horses were all out and the presence of the *ispravnik* hurried the post keeper off to procure extra horses from the village people.

The distance from Irkutsk to Yakutsk by the winter road is 1,800 miles, with 122 post stations in between, placed at convenient distances along the route, varying from 9 to 21 miles apart, though the usual distance between stations is from 13 to 17 miles. The post stations are in villages and presided over by the post keeper, whose duty it is to see that the station is kept clean and in repair, keep the post drivers at hand and in order, attend to travelers, receive the money for the hire of the post horses, and particularly to see that sufficient fresh horses are in readiness when the mail is due. The post keeper is paid by the Government.

The station is built and furnished by the post drivers, who also must do the work necessary to keep the place clean and in repair. The post drivers own their own horses and receive all the money paid for the use of the same, the Government revenue from the post routes being derived from an additional charge of 5 cents for each post horse that leaves the station.

As a rule the stations between Irkutsk and Yakutsk are well kept and scrupulously clean. When a traveler arrives at a station the post keeper is bound to furnish horses and a driver if he has them, although no driver is obliged to take his horses out before the expiration of four hours after their return from a trip. There are printed rules posted in each station governing the hiring of post horses, and they are very explicit and plain. The number of horses the traveler must take depends upon the size and description of his *pavoska*, but when the roads are bad or the snow is deep the drivers will put on extra horses to make it easier on the others, for which no extra charge is made other than the Government tax of 5 cents.

From Irkutsk to Verkolinsk the charge is about $2\frac{1}{2}$ cents per horse for each mile, while between the latter place and Yakutsk the charge is $3\frac{1}{2}$ cents. Besides this each driver must receive a small "tip" or gratuity, without which he can not be induced to drive his horses beyond a slow trot. The speed the traveler makes between stations depends upon the size of the tip. The horses must be paid for before they leave the station, but the tip is always given to the driver when

you arrive at the next station, and as the driver passes the word on to the next driver you are always sure of service and speed in proportion to your "tea money," as the tip is called. The least amount ever given is 10 cents, and a tip of 25 cents will insure the horses going at full speed as long as they can stand it.

For the first eleven stations beyond Irkutsk we did not make very good time, for while we traveled at an average of 10 versts an hour, considerable time was lost at the different stations collecting horses from the village when the post horses were all out, and we did not reach Verkolinsk until 9 p. m. of the 14th, having taken thirty-six hours to accomplish the first 194 miles. At this station we struck the Lena River, and from here all the way to Yakutsk we traveled on the Lena, except the few places where we cut across the country to avoid a big bend in the river. This gave us a good level road, and as we now found horses plentiful in the stations we made excellent time, doing usually 10 miles an hour in the daytime, and at the different stations losing only the time necessary to change horses, except, of course, when we stopped for meals three times a day.

At night we could not travel as fast as in the daytime, for the driver could not see the road so plainly and had to be more careful. At night, too, it required more time to exchange horses, for the station people were generally asleep when we arrived, whereas during the day our pavoska could be seen coming and the horses would be ready for us. At some places we were able to change horses and leave, ten minutes after we pulled into the station yard.

The order the governor-general had sent along the line caused the people to be on the lookout for us, and very often, when some station happened to be at a place where the river banks were high and steep, the keeper would be at the foot of the hill with fresh horses waiting for us. In this way, traveling night and day, we made as high as 164 miles in twenty-four hours.

We slept in the pavoska, taking turn about, so that there would always be one of us awake to pay for the horses at the stations, or in case anything happened. The pavoska being large we were not cramped for room, and with mattresses to sit or lie upon, pillows to lean against, great coats and sheepskin blankets to keep us warm, we were, all things considered, quite comfortable. Of course there was considerable jolting when the road was rough and uneven, but one soon gets accustomed to that. The weather was for the most part clear; the thermometer averaged about 5°, with little wind, so that we could generally keep the apron down and get a good view of the surrounding country as we went along. Very often when the horses were being changed at a station one of us would walk ahead along the road until the pavoska came up, and in this way get a little exercise.

When we left Irkutsk we had one driver, and our pavoska was drawn

by three horses, abreast, which arrangement continued as far as station 33. The road then became somewhat narrower, and the horses were usually harnessed either two abreast and one ahead or all three tandem fashion. In this latter case we had two drivers, one of whom rode the head horse. Occasionally when the road was bad and a recent fall of snow had made it hard pulling we had four horses harnessed tandem. The driver on the head horse kept him in the road, looked out for holes or bad places, and when necessary gave warning to the driver on the pavoska. Between Irkutsk and Yakutsk there are but two towns of any importance, Kirinsk and Vitim. We reached the former on the fifth day at 2 o'clock in the morning, and as we found a small hotel and bath at this place we remained until the afternoon, when having been refreshed with a bath, a good rest, and a good dinner, we again took the road at 4 o'clock on the 18th.

From Kirinsk to Vitim the road was rather bad in places, and our pavoska was overturned twice. The first time we were dumped in the soft snow, and were delayed only long enough to right the pavoska and straighten out our belongings, but the second time we were not so fortunate.

In the fall, when the river has frozen sufficiently to sustain travel, the winter route is started, the post drivers of each station preparing the road halfway to the two adjacent stations. The ice is carefully inspected, and having selected a trail free from air holes, it is marked with bushes or tree branches stuck in the ice at short intervals. This enables the driver at night to see the direction of the road for some distance ahead, and by the continual use of this road by the caravans and travelers going up and down the snow is packed as it falls, so that by the middle of the winter there is a plain, hard road, while on either side the snow is deep and soft. Near Irkutsk, where there is more travel, the road is quite wide, but beyond Kirinsk it is quite narrow, in fact just wide enough for the pavoska, and necessitating, as I have already stated, harnessing the horses tandem. Sometimes during the winter new holes are formed in the ice, for the current is very swift. Then the water overflows and spoils the road necessitating a new road to get around this bad place.

Where we capsized the hard, packed road was very narrow, scarcely wider than the sled runners, and if the driver was careless one runner would get off the road and sink down in the soft snow, which afforded no resistance to the outriggers and over we would go. This did not make much difference if it was only snow that we fell into.

The second time it happened it was just about dusk. The water had overflowed during the day and soaked the snow flush with the road bed, and the weather had not been cold enough to form a strong crust. We were traveling at a good rate, and I was taking my turn asleep, when I was suddenly awakened by finding myself in a lot of slush with

Mr. Smith on top of me. We scrambled out and found that the driver who rode the head horse had been jerked from his seat and was stuck in the slush head first, unable to get out, while the other had his legs pinned under one of the horses. We pulled them both out, and then finding we were unable to straighten up our rig, sent one driver on horseback to bring help from the next station, which was fortunately but two miles farther on.

Meanwhile we got our effects out of the pavoska, everything being soaking wet. We ourselves were in the same condition, and in a short time our clothes were frozen stiff. In about half an hour the post keeper arrived with five men and we soon righted our pavoska, threw in our outfit, and galloped the horses to the station, reaching there about 7 o'clock in the evening. Although we were but two stations from Vitim, where I intended to make a short stop, we were obliged to remain at this station to dry out; so we kept a roaring fire going all night and at 5 the next morning were able to start, which brought us into Vitim before noon of the 21st.

By this time our pavoska was rather rickety, for we had passed through long stretches of woods, where we made short cuts to avoid a bend in the river, and as the road was narrow the drivers in making time had bumped up against stumps and trees, so that our outriggers were smashed and the pavoska shaky. As it would take two days to repair the damage and we were still but half way to Yakutsk, another pavoska was obtained. We shifted over the provision box, had some few repairs made, and left Vitim shortly before noon the following day, March 22.

No stops were made from here to Yakutsk, and as the roads were fair and the weather held good, we pulled into Yakutsk shortly after noon March 28, having been fifteen days and a few hours in making the trip from Irkutsk, including stops of forty-eight hours in all on the way. We were told that was fast time, as the mail generally takes about twenty days for the same trip. But then no one is in a hurry in Russia.

After striking the Lena River at Verkolinsk the villages became fewer, and beyond Vitim we passed scarcely any, save those at the post station. We saw plenty of life, however, all along the route, and it was rare indeed that we did not meet between stations some caravan or traveler, or a peasant hauling a load between the villages. Some of these caravans were very long, and we once counted 30 sleds in the train.

There being no hotels in Yakutsk, arrangements had been made for us in anticipation of our coming, and instructions sent to the post keeper of the adjacent station, so that when we arrived at Yakutsk we were not driven to the post station, but were taken to the house in which we were to lodge during the time it might be necessary to remain

in the place, Here, shortly afterwards, the chief of police presented himself, and, like every official we met along the route, placed himself at our disposal for any assistance or advice he might be able to give.

It soon developed that from Yakutsk to Okhotsk the road was very narrow, scarcely wider in fact than the usual dog sled, and as our conveyance would be drawn successively by horses, reindeer, and dogs, our heavy pavoska would be of no further use to us being both too wide and too heavy. There are comparatively few travelers along the route between Yakutsk and Okhotsk, and the mail goes but once a month, so that when we looked about for sleds there was not one to be had. A sled builder was therefore directed to build two single covered sleds and a baggage sled, and though it happened that this man had other work on hand, the chief soon persuaded him to start our outfit at once.

The following day I should have paid my respects to the governor, but having received word that he was ill, I deferred my visit until the next day when I also had the honor of dining with him. I found him exceedingly affable and pleasant, very much interested in our mission, and anxious to assist us in every way he could.

Yakutsk has the reputation of being the coldest place in Siberia during the severe part of the winter, December and January, but when we passed through in March the heavy snows had practically ceased, the thermometer averaged but 5° F., and that time of the year is considered best for travel. Yakutsk has a population of some 3,000 people in the town itself, though there are many thousands more in the numerous small villages about, some of which are so close to the main town as to be almost a part of it. The inhabitants are mostly Yakuts, the people to whom that country formerly belonged before it was conquered by the Russian Cossacks, and the town of Yakutsk is on the site of what was in olden times the head village of the Yakut people. But that was sufficiently long ago for the Yakuts to have become affiliated with the Russians, and they now have their own priests and churches. Many of the minor court officials also are Yakuts, though, of course, all the higher officials are Russian. Like the Russian peasant, the Yakut is never in a hurry, and as our sled carpenter was a Yakut workman, our sleds progressed slowly, notwithstanding the constant urging of the chief. Consequently it was not until April 6 that we were able to set out again, having thus been delayed nine days.

Meanwhile we had been gathering what information was available regarding the Okhotsk Sea region, particularly as concerned the reindeer, and I learned for the first time that deer might be obtained south of the Gishega country.

While we were awaiting the completion of the sleds, a merchant, Mr. W. F. Bushuyef, arrived at Yakutsk from Okhotsk. This merchant maintains trading stations at several places on the coast of the

Okhotsk Sea, and as he was familiar with that country I gained much valuable information from him. He informed me that most of the larger herds of Tunguse deer, which are reported to be the most superior breed of all the Siberian reindeer, were in the vicinity of Ola, a town on the coast of Okhotsk Sea, about halfway between Okhotsk Gisgeha, this town being about the central part of the Tunguse section of the country; that not 75 miles from Ola lived two rich Tunguse deermen who owned some 10,000 deer between them; that the Tunguse of this section understood and used money; and that I could undoubtedly purchase deer from them with currency since he had bought deer himself, though he did not know how they would take the idea of selling a large number at one time. Mr. Bushuyef also signified his readiness to enter into a contract to deliver 500 deer the succeeding year, but of course I could make no agreement with him at that time. Mr. Bushuyef having a business connection with the Russian Seal Skin Company's trading stations, upon which I had been authorized to draw, readily furnished me with authority to draw upon his own stations at Ola and Yarmusk for whatever I might need. All this was good news, for Ola was now my objective point and not Gishega as I thought in St. Petersburg, and I was reasonably sure of getting to Ola before the winter roads became impassable.

FROM YAKUTSK TO OKHOTSK.

Our sleds being completed, on the 5th I paid my respects to the governor, and the next morning, April 6, having replenished our stock of provisions and obtained a fresh supply of frozen soup and "pelmenia," we set out for Okhotsk. The country between Yakutsk and Okhotsk is peopled mostly by the Yakuts, and as the post drivers are almost without exception Yakuts, many of them unable to speak Russian, a second interpreter was necessary. The governor therefore kindly detailed to accompany us as far as Okhotsk a Cossack, who understood both Russian and Yakut.

Mr. Smith and I each occupied a pavoska, a portion of our provisions being distributed between us, while the rest of our provisions, our baggage, and the Cossack were carried by the third sled. Each sled was drawn by one horse, and in addition carried a driver. These sleds are somewhat like the usual dog sleds of Alaska, 10 feet long and 2 feet wide, the body being 12 inches from the ground, and fitted with a side rail 9 inches high, so that the total height of the sled is but 21 inches. The runners are flat, $3\frac{1}{2}$ inches wide and only 1 inch thick, the front or curved end being so arranged as to be very flexible and allow plenty of spring without communicating it to the body of the sled. This is accomplished by bending a green sapling double, lashing the ends of the curved runner to this sapling at the proper distances on each side of the bend, and then binding the ends of the sapling to the forward runner stanchion on each side of the sled. The body of

the sled does not extend to the forward end of the runners and is not secured to them. This gives great flexibility and permits the sled to stand very rough usage over uneven and jolty roads with the least danger of a break. The sled is very light, and the whole thing of course is lashed together, no nails or screws being used in its construction. The pavoskas were simply ordinary sleds fitted with a canopy or hood, high enough to allow the traveler to sit upright, and just large enough to afford shelter, an apron being fitted to cover the face of the canopy in case of snow or head wind. About 6 feet of the after part of the sled is separated from the forward part by an upright board between the rails, and another piece is lashed across the rails above this board, to form the driver's seat. The whole of this boxed-off space and the canopy is covered with felt, and with the apron buttoned up the traveler is entirely protected from the snow or the cold winds. The canopy, being a light framework, does not add greatly to the weight of the sled. The space on the sled forward of the partition is used for provisions or baggage. One horse pulls the sled by means of a pair of shafts, loosely secured to the forward sled stanchions.

With our mattresses, pillows, blankets, and great coats these pavoskas were much more comfortable than the large Lena River pavoska, for the former, being lashed together, had much more give to them, and there was no bumping and jolting as with the latter, which was rigid. In fact, our friend the chief of police paid so much attention to our comfort in the construction of these sleds that the element of strength was rather overlooked, and by the time we reached Okhotsk there was very little left of our canopies.

The distance from Yakutsk by the post road is 750 miles and is divided into three sections; the horse posts for the first 300 miles from Yakutsk, with the stations averaging 23 miles apart; the reindeer posts for the next 380 miles, with the stations averaging 50 miles apart, and the dog posts for the last 70 miles, with the stations 35 miles apart.

The charge per mile is $2\frac{1}{4}$ cents for each horse, and in changing to reindeer and dogs two reindeer or one team of fourteen dogs is reckoned the same as one horse.

When we reached the first station beyond Yakutsk, the post keeper insisted that our sleds were too heavy; consequently all the provisions were taken off our pavoskas, and the baggage and provisions divided between two sleds, so we had after that four sleds in all in our train.

For the first eleven stations (220 miles) our route took us across a hilly country, here and there thickly wooded, and though the road was good and hard, we did not make very fast time, for the horses were far inferior to those of the Lena River post stations. Their legs were short, their bellies were enormous from overfeeding, and it required continual effort on the driver's part to keep them on a trot.

In going through the woods the narrow road wound in and out among the trees to such an extent that our canopies were constantly menaced by the leaning trees or branches hanging over the road. At about 6 o'clock in the morning of the 8th, as we were approaching station 11 and I was asleep, my driver happened also to be dozing and we ran full tilt against a tree that had fallen across the road. The canopy of my sled was almost completely demolished, and it took us three hours to repair the damage.

Along this route there are no regular stations, the post keeper utilizing a part of his log hut for a station, and while the room was usually quite clean, the odor was anything but pleasant, for the Yakuts are great cattle raisers, and the cow stable and dwelling are in the same building, the one opening into the other. As the cattle are kept in this stable the greater part of the winter, and the people are not particular about keeping the door closed at all times, the Yakut dwelling accumulates an odor that is quite distinctive. The newly born calves, when the weather is cold, are usually kept in the dwelling room and form part of the family.

After leaving station 11 we came to several small streams, along which we sometimes traveled, thus enabling us to avoid the long stretches of woods which line the banks of the streams. From station 12 to 13 was 62 miles, and we were obliged to stop half way between and rest the horses for six hours, for the latter half of the road crossed an elevation of 2,000 feet.

THE REINDEER POST.

On the 9th we came to Chernolyskyar, station 13, where we changed our horses for reindeer, each horse being replaced by two deer. The station deer from constant use are quiet and docile allowing themselves to be patted, and standing quite still while the driver adjusts the harness or the reins. They are harnessed in pairs by a very simple arrangement, a plain loop of rawhide about 2 inches wide that goes over the off-shoulder between the fore legs. These loops are made fast to the ends of a single piece of rawhide that goes over the bent sapling on the front end of the sled runners, allowing it free motion. This makes both deer pull together, for if one gets ahead the other's hind legs hit against the sled and he is spurred on.

This harness impressed me because of its simplicity and adaptability, for it is easily and quickly made, fits any deer, is quickly put on and removed, and has the added quality of not allowing one animal to do all the work, besides the very important fact that it does not chafe the hind legs of the deer. The deer are controlled by a single rein running between the pair, secured to a short line from the halter of each. A strain on this line pulls the deer's heads toward each other, thus throwing the weight of the sled from the trace to the rein, and they are forced to stop.

The deer we obtained at station 13 belonged to the keeper of the station, a half-breed Yakut, and were fine animals, doing the 45 miles to station 14 in six hours without a stop, maintaining a trot all the time. The deer at the succeeding stations were very poor and disappointed me very much, for they were smaller and far from strong, playing out on the road in a very short time. I subsequently learned that they were owned by a man who had a contract for furnishing deer to these stations. When I complained to the station keepers they said there were plenty of good deer to be had, but they received only the worn-out and poor ones.

There had been a recent light fall of snow, but we had fairly good roads up to station 16. About noon April 11, shortly after leaving that station, however, a wind and snow storm set in, which increased to a regular blizzard, soon driving the snow so that one could scarcely see the sled ahead. The road soon became drifted over and in places obliterated, and often our deer lost the road entirely and floundered about in the deep unpaeked snow. The weather for the past few days had been very mild, the thermometer hovering around the freezing point, and as the overflow on the rivers had not frozen, we had a very disagreeable time crossing several that lay in our path. By 8 o'clock our deer were very tired, and the darkness coming on making it impossible to keep in the road, we camped in a thick patch of woods, where we would get some shelter from the driving snow. We had left station 16 shortly after noon, and as No. 17 was only 50 miles distant we should have reached there by 8 p. m. during ordinary weather, but when we camped at that hour we had made but about 15 miles.

It usually takes the mail from twelve to fifteen days from Yakutsk to Okhotsk, and when we reached station 14, which is about half way, in four days, it looked as if we were going to make a quick trip, for it is said that bad weather is unusual at this time of the year. But this storm, which was destined to last five days, knocked all our calculations on the head, and it took us ten days to cover the second half of the distance.

The storm continued throughout the night, and in the morning our baggage sleds were completely drifted over and had to be dug out. Besides, the deer were very wild when the drivers went to catch them, and we did not get started until 9 o'clock. The snow was very deep and soft and had destroyed all trace of the road, so that a man had to keep ahead on snowshoes, feeling down through the snow with a stiek to find the old hard roadbed. It was hard work for the deer, and at 1 o'clock they gave out entirely and had to be turned loose. At 4 o'clock we made another start, but at 7 the deer again gave out and obliged us to camp, having made only 10 miles during the day. Our drivers said such a fall of snow was most unusual at this season, which is considered the best time for traveling and the time for all the tea caravans to move from the coast to the interior. Indeed, we had passed

many such caravans, and one day I counted 220 deer sleds loaded with tea.

There are two ports on the Okhotsk Sea from which the brick tea is transported by the winter route to the Lena country—Okhotsk and Ayan. The caravans we had passed were from Okhotsk and bound to Aldan, where the tea is stored until summer and then taken by the steamers down the Aldan River to the Lena River. From Ayan the tea is transported by sled in winter 300 miles to Nelkan, and from there shipped in the following summer down the May River to the Lena. All this transportation in winter is done with the reindeer.

The storm continued during the day and night of the 12th, and still showed no sign of cessation on the morning of the 13th. We made an early start, but the deer had been able to feed but little during the night owing to the deep snow, and in four hours gave out, whereupon we camped at 10 o'clock, having made about 2 or 3 miles. For the past day and a half we had been ascending the western slope of the divide between the Okhotsk Sea and the Lena country, so the difficulties of the deep snow were further increased by the uphill grade. The timber was getting scarce, and the wind having a free, uninterrupted sweep, the drifts were very deep in many places.

LARGE TUNGUSE DEER.

The head driver now told us that when he had been over this road several days before there were some Tunguse deer-men living near the place we were now camped, he judged some 5 miles distant, and he thought he could find their camp and obtain fresh deer, ours being now of very little use. Having allowed the deer a little rest, the best two were selected, and at noon two of the drivers started out with two empty sleds to find the Tunguse deer-people, while we settled ourselves as comfortably as possible to await their return. During the afternoon the wind moderated and by sunset was very light, but the snow still continued to fall.

About 8 the next morning we heard a shout and saw our drivers returning with nine very large deer, two of them being ridden by a boy and a girl. They also brought two empty sleds. The drivers had not reached the Tunguse camp until well into the night, the snow being so deep off the road that their deer gave out and had to be left, while the men worked their way along through the drifts. They found no one at the camp but a boy and girl and their mother, all the men being absent somewhere, snowbound. It took considerable persuasion to get the old woman to allow the deer to be used in the absence of her lord and master, but the promise of a liberal reward finally induced her to agree, and she had sent the boy and girl, aged, respectively, 14 and 16, to look after the deer.

We were soon under way again, and for the 5 miles to where our

two drivers had turned aside for the Tunguse camp we had a broken road, but after that the work began again. Where there was still a faint trace of the road the boy rode ahead, leading two more deer; then the girl followed, also riding one and leading two, to beat down the snow. The sleds then came along in the order of their weight, the pavoskas bringing up the rear, being heaviest, though Mr. Smith and I each drove our own pavoskas, thus lightening the load by allowing our drivers to sit on the empty sleds. When the road was entirely obliterated, one man went ahead on snowshoes, feeling with a long stick for the roadbed.

These Tunguse deer were big fellows, much larger than the station deer, and they stuck to their work steadily. Notwithstanding the difficulties we made excellent time, and by 2 p. m. had gone some 12 miles, including 7 miles of road breaking. Here we came upon a tea caravan of 40 sleds and 100 deer that had been stalled for three days by the storm. We stopped for tea and to rest our deer, and at 6 p. m. started again, the caravan also starting in the other direction, taking advantage of our newly broken trail.

The deer in this part of the country are very much domesticated and tame, and when they are allowed to feed the drivers never tether them, but turn them loose to wander as they will. When ready for a start, one man rounds the deer up and drives them to camp, where the rest surround them and inclose the herd with a long hide line, which is stretched along between the men. The animals stand very quietly while some of the drivers pick up the halter lines that have been trailing in the snow, and the deer are then led to the different sleds and harnessed. I never saw an occasion on our whole route when it was necessary to lasso a deer. When traveling the driver uses a switch with which to touch up a lazy deer, but some of the old deer do not seem to mind a switch any more than does an army mule.

After thrashing through the snow for some 5 miles beyond our last halting place we suddenly struck a road that had recently been broken from the next station, and we then proceeded on a trot, reaching station 17 about dusk of the 14th, having been more than three days making the 50 miles from station 16. It was still snowing and continued to do so all night, though the fall was not heavy.

The post keeper told us that the road was still unbroken to the next station, 60 miles, and we could not make it with the station deer alone; but there being some Tunguse deer in the hills not far away, messengers were sent for them during the night and the next morning we set out for station 18 with twenty-two deer, most of them being the large Tunguse deer, to break the road ahead of the sleds.

We stopped several times during the day to rest the deer, but made very good progress, and at dusk when we camped our drivers said we were halfway. The snow fell lightly during the day, but toward

evening the weather turned bad again and we had more wind and thick snow, which lasted all the following day. We started again at 8 in the morning, all the spare deer having been taken on ahead at daylight to make the road. We were still on the western slope of the divide and going upgrade, which made the work tell on the deer very much, but fortunately about noon we came across a Tunguse encampment near the road and obtained fresh deer, so that we reached station 18 about 10 that night. These Tunguse deer are certainly magnificent animals, for they can carry a full-grown man several miles through very deep snow. In fact when we were sighted from this camp two Tunguse came out to meet us, riding deer that at times sunk in the snow nearly to the shoulder. The Tunguse who own reindeer do not remain long in one place, for they are of necessity wanderers, being obliged to shift camp frequently to keep their deer on good feeding ground. In these shiftings about the deer are utilized not only as draft but as pack animals, particularly when the snow is deep. The illustration number 28, shows a Tunguse family on the move.

During the day we passed three caravans that had been snow-bound for six days, but they all started as soon as they found we had broken a road. By morning the storm had ceased and good weather set in.

We had now gotten over the worst of the road, for some sleds had been over the trail between stations 18 and 19 three days before, so we had only three days' snowfall to contend with, and as a result we covered the 50 miles to station 19 by the time darkness set in. I wanted to start out immediately for station 20, but as usual the station keeper said his deer would not stand the trip, and had to send off during the night for larger deer.

During the night the weather turned colder, which was fortunate, for the following day we had to travel along rivers which had overflowed, and had they not frozen over during the night, it would have made a bad job for us. We had now crossed the divide and were traveling down the eastern slope, but we had six days' snowfall to go through, and did not get to station 20 till late at night. Having but 25 miles to go to reach the next station, we changed deer and kept on all night, reaching station 21 early in the morning of the 19th. At this station, Agatkinskyar, we changed from deer to dogs, one team of dogs being reckoned to be equal to two deer.

These Siberian dogs are very much smaller than the Alaskan dogs, from fourteen to twenty being put in one team, but they are far better trained and travel much better than the latter. They are harnessed in in pairs, there always being an even number of dogs in a team, thus having two leaders. The sleds are never loaded heavily, as the people claim a heavy load would get the dogs in the habit of going slow. As a result the dogs can make 70 miles a day over a fair road, and keep it up several days. The dogs are well trained and obey quickly the

driver's voice, directing them to the right, left, or straight ahead. The driver never gets off the sled, except to disentangle some dog or to shift them in the team, and he carries a stout stick shod with an iron point to use as a brake going downhill, otherwise when the dogs came to an incline the sled would run over the little fellows, and perhaps maim some of them. These dogs are very savage and will obey no one but their master, who is the one who feeds them.

We had but 70 miles to cover between here and Okhotsk, with one change of dogs in between at station 22; so leaving station 21 on the morning of the 19th we pulled into Okhotsk about 9 o'clock the following morning, April 20, though we had made a long detour to avoid an overflow on the Okhotsk River, along which the road usually lay. We were driven to the house of the nachalnik, or chief of the district, who welcomed us heartily and insisted we should be his guests during our stay in Okhotsk.

FROM OKHOTSK TO OLA.

The snow was now melting quite rapidly, the thermometer hovering around the freezing point and a little above during the day. During the night, however, the temperature would drop below freezing and harden the snow, so that from Okhotsk on we had to do most of our traveling between 5 p. m. and 8 a. m. in order to have a hard road and make good time. We replenished our larder, and having obtained from the nachalnik letters to the various minor officials along the route, we left Okhotsk at 5 p. m. in the evening of April 22, with two pavoskas and two open sleds, which latter carried the Cossack, together with our baggage and provisions.

Between Okhotsk and Gishega the post stations or villages are much farther apart than between Yakutsk and Okhotsk, the greatest distance between two stations being some 270 miles. But between the villages there are always a series of "povarnies," or empty log huts, built at convenient distances, which serve for shelter in case of a storm or when necessary to stop in order to rest the dogs. These huts are each provided with a fireplace, some benches, and a table. Theoretically they are built to serve in an emergency, but ordinarily they seem only to delay the traveler, for no matter how short the distance might be between the "povarnies" it is extremely difficult to get by one without losing at least an hour to make and drink tea. Between Okhotsk and the next village (Inskyar) the distance is only 70 miles, yet there are three "povarnies" on the road, and at each we were obliged to stop, build a fire, and make tea, the drivers always having some excuse, dogs tired or hungry or something. We lost an hour at each of these huts, and did not reach Inskyar till 8 o'clock the next morning, having thus been twelve hours making 70 miles, which should have taken but ten, for the road was good and the trail well marked.

We were received as usual by the starosta, with his medal of office hanging around his neck, and surrounded by the usual group of curious natives. Inskyar is a small village of Russian peasants, consisting of about twenty-five houses, and the people all looked prosperous and clean, the post station being particularly clean and well kept, the reason probably being that it is close to Okhotsk and under the immediate eye, as it were, of the nachalnik. It is some two miles from the sea and situated on the inner bank of a salt lagoon, which is separated from the sea by a narrow sand spit. A small river empties into this lagoon, and on the sand spit is a collection of huts in which the people live during the summer while catching fish. Many of the Tunguse from the interior also come down here during the summer to catch their supply of fish.

We remained at Inskyar during the day, the sun being quite warm and the snow correspondingly soft, and we utilized the time by having bone runners fitted to our pavoskas. These runners are strips of bone sawed from the jawbones of the whale, and being quite hard and smooth, add greatly to the mobility of the sled at this time of the year, when the snow is wet and damp. The two sets we bought were, by the way, the only ones in the village, and it required considerable talk and 20 rubles to obtain them. In former times when the American whaling vessels roamed the Okhotsk Sea and killed whales in large numbers these bone runners, which are really a necessity in the spring, were of course plentiful, for many of the whale carcasses drifted ashore. The people all along the shore of the Okhotsk Sea spoke of these olden times as the halcyon days, for the whale carcasses added immensely to their food supply, both for themselves and their numerous dogs. Besides, they traded their furs to these whale ships, and received in return a considerable amount of provisions, to say nothing of the whisky, with which a whaler is generally plentifully provided. But the Okhotsk Sea being an inclosed sea belonging to Russia, between 1860 and 1870 she took means to exclude the foreign whalers, and since that time whale meat, bone for sled runners, American trade goods, and whisky, have been scarce in that region. With most of these articles a traveler can dispense, but the sled runners are very much needed, and hard to obtain. Now the people in that region have to rely for their winter food mainly upon the fish which they dry and salt during the summer. The dried fish also serve to feed their dogs during the winter months. Dry, salt, smoked, and fresh fish being the principal articles of food for the coast people, the inhabitants and their houses always have a fishy smell, which of course one doesn't mind when accustomed to it, but it is anything but pleasant at the first encounter.

We left Inskyar at 5 p. m. Tuesday, 23d, for the next village, Towoosk, 270 miles distant, with ten "povarnies" along the road.

These huts are built by the people of the different villages at their own expense, the people of each village putting up the "povarnies" on their half of the road. This is not a difficult task, as the country is wooded and the "povarnies" small. Occasionally these huts burn down, some careless person neglecting to carefully extinguish the fire before leaving, but they are generally rebuilt immediately.

From Okhotsk to Inskyar our road had taken us along the shore or a short distance from it, and we could see plainly the signs of approaching spring, for the sea ice was breaking loose from the shore, and often the shore was entirely free, but with the pack in the distance. From Inskyar we still kept along the shore for some 15 miles until we came to the head of a small bay that makes into the coast, when we turned into the hills. During the night we struck across a range of mountains that rose bluff from the sea, and by 8 a. m. had reached the second hut, having stopped at the first hut for the usual tea.

At this second hut we remained during the day, as the sun was very warm and the dogs tired because of the hills. We started again at 4 p. m., and by midnight reached the top of the divide, where we came to hut 3 and stopped for an hour. At 6 o'clock in the morning we started on our downward trail, but I was foolish enough to go to sleep, and when I awoke at 5 o'clock my sled was standing outside of hut 4, which was but 17 miles from hut 3, and down hill. I found the drivers having tea in the hut and preparing to remain for the day. As by this time I was able to express my opinions in Russian on certain occasions, my observations to the head driver for not waking me when we arrived were more forcible than polite, and I insisted upon starting again at once. This time I put another sled ahead and kept awake, and at 9 o'clock reached hut 5, 25 miles from hut 4, thus putting in 25 miles in three hours. These people in eastern Siberia are a curious set. They can travel very fast if they like for their dogs are well trained, but they will stop for tea at every possible opportunity, and the amount of that article they can drink fills the traveler with astonishment. I have seen a driver drink 10 glasses of tea at a sitting, and I have heard of even bigger records.

The Russian peasants of this region are descended from Russians who settled here so long ago and intermarried with the natives to such an extent that they are sometimes hard to distinguish from the civilized natives, the Tunguse and Yakuts. They, the Tunguse and Yakuts, are very pious—at least, outwardly, for they all cross themselves before eating, and upon entering or leaving a house. If one happens to pass a driver's house when leaving the village that driver stops the team, faces the house, removes his hat, and devoutly crosses himself. In every house is an "ikon" or shrine, with candles ready for burning on holidays and any special occasion. I have never seen a house in eastern Siberia inhabited by peasants, Yakuts, or Tunguse that did

not have a shrine, and even in the forest every log hut used simply as a stopping place has its shrine. No matter how small or poor it is, it is still a shrine, and always has a candle or two. The Russian Church has done its work well, for the Yakuts and Tunguse as a race, both town and wandering, belong to and observe the forms of the Russian Church; and the Yakuts have priests and churches of their own. The Koryaks and Chuckchees have not yet been "christianized" as a people.

We remained at hut 5 during the day and started again when the sun was getting low, about 5 p. m. Shortly after leaving we struck the headwaters of a large river, the Kavar, which flows into the Gulf of Tovoosk. From there on our course lay along this river, and for the most part we kept on it, only leaving it occasionally to cut off a bend in the stream. By 7 o'clock the following forenoon we reached hut 7, but as the weather was cloudy and appeared threatening, we kept on, so as to get as far as possible before the snow began to fall. At 2 in the afternoon we reached hut 8, where we were obliged to rest the dogs. Started again at 10 in the night. Made one stop at hut 9, and then kept on, but as the snow began to fall, I would not allow the drivers to stop at hut 10, and we reached Tovoosk at 4 p. m., the 27th, in the midst of a thick snowstorm.

The lower portion of the river Kavar had begun to overflow and break up, and many times we were obliged to make long detours to avoid water on the ice. The weather was very mild, and from all appearances sled travel would soon cease on account of the overflow, for this river cuts through a range of mountains, and in many places the banks are so extremely steep and precipitous that an overflow would necessitate either crossing the mountains or making a long detour by going round them—a matter of several days' travel through deep snow. We evidently had gotten through just in time.

Tovoosk is a small village of some twenty houses or huts, most of the inhabitants being Tunguse, whose ancestors long ago quit their wandering life and took to town life. The village was not as clean nor as prosperous looking as the last, and the post station was notably poorly equipped. Tovoosk is situated on the west bank at the mouth of the River Yarn, which empties into the sea about the same place as the Kavar, only the Kavar flows from west to east and the Yarn from north to south. We remained only a few hours at this place and started for the next village, Arman, 50 miles distant, at 7 in the evening. Just as we left the village we met the Cossack bringing the last winter mail from Gishega. Reached Arman at 2 the next morning, the 28th, having stopped at the intervening "povarnie" one hour, thus making the 50 miles in eight hours.

This village of Arman is at the mouth of the River Arman on the west bank, and comprises some fifteen houses. The inhabitants here

are the descendants of Russians, Tunguse, and Yakuts, the Tunguse blood predominating. They are for the most part dark skinned and have the facial marks of the Tunguse. The language is Russian and Tunguse. I could not find out how old these settlements are, nor how long this post route has been established. The mail has been going three times a winter between Okhotsk and Petropavlovsk only for the past three years, but it has always gone once a winter between these places since the oldest inhabitant here was born, and that is sixty-five years ago. The price has always been the same, $4\frac{1}{2}$ cents per mile for each sled, which is paid alike for carrying travelers or the mail. When officials travel in their own district, sleds and dogs must be furnished free.

In most of the coast settlements the live stock consists of horses, dogs, and cows, the horses for summer travel and food, the dogs for winter travel, and the cows for food and milk. Horse meat, I am told, is very good, tasting something like goose, but I can not confirm this from actual experience. The horses are allowed to run wild and graze for themselves, and during the winter they paw up the snow to get at the grass, exactly like the reindeer. The dogs are very savage and ravenous from being underfed, and, while they will not touch a horse or cow in the village, they will chase and eat those that are roaming loose on the tundra, and indeed one night our teams ran far out of the way after a herd of horses before the driver could stop them.

The weather was getting perceptibly warmer, and the 28th, at 1 p. m., my thermometer registered in the shade 50° F. We left at 3 p. m. for the next village, Ola, 100 miles. There are two routes between these villages, one along the shore and one across the hills back in the country, the latter for use when the shore route is impracticable. Our drivers decided to try the shore route, that being somewhat shorter, and a very good road after passing around some bluffs that run precipitous to the sea. We succeeded in getting around these bluffs, but it was a tight squeeze, the shore ice having broken off except a very narrow strip, barely wide enough for a sled to pass. In places our sleds had to be unloaded and passed by hand across breaks in the ice. After some 5 miles of this work we got around and came to a large bay, the ice of which had not yet started out. This was a good, hard, smooth road, and we made very fast time. Crossed this bay and then another called Mifkan Bay, which brought us to the neck of a narrow peninsula separating Mifkan from Ola Bay; crossed this and then stopped for an hour, after which we kept along the shore on the ice of Ola Bay, and reached Ola at 6 o'clock in the morning of the 29th of May. We saved some 25 miles by getting around the bluffs, so that we covered 80 miles in eleven hours, including the delay in slowly working around those bluffs.

TRANSPORTATION BY REINDEER.

Ola is a Tunguse village, and is the point from whence are transported overland all the stores for the Russian penal colonies and other villages on the lower Kolima River. There are Government and private warehouses at Ola, in which the goods are placed when brought by the steamers in the summer. In the winter these goods are carried by deer sled some 400 miles to a place called Cemechan, at the head of navigation of the Kolima, and the following summer floated down the Kolima on flatboats. This route was opened five years ago by a Cossack named Kalinkin, who has controlled the route ever since, having the contract to transport not only all the Government stores but also the goods of the private merchants. The contract price is \$2 a pood (36 English pounds) from Ola to Kolymsk, whereas before this route was established all the goods for the lower Kolima were transported from Yakutsk, mainly with horses, and cost \$6 a pood. Kalinkin owns only about 500 reindeer himself, and consequently depends for his transportation almost entirely upon the natives of this region, whose deer he employs. In the fall when all the stores have been landed from the ships, and Kalinkin knows exactly how many poods to provide transportation for, he makes his arrangements with the native Tunguse deer-men, who all come to Ola for that purpose.

Each deer-man announces how many poods he will transport, and receives half of his pay at once to bind the bargain, for that is the custom of the country, and without a portion of the money down, the Tunguse does not consider his bargain binding, while having received the money he can be absolutely depended upon to fulfil his agreement to the best of his ability. No written agreement or paper of any kind is used in these transactions, all agreements being by word of mouth alone. Arrangements having been made for all the goods to be transported, the deer-men disappear, and nothing more is seen of them until January, at which time they begin to come in with their deer and sleds all ready for the trip. The number of sleds the different deer-men bring varies, of course, according to the number of poods each man has agreed to take, and ranges from a train of only five sleds belonging to a poor man who owns but a few deer, to a train of seventy-five or one hundred owned by some rich Tunguse who number thousands of deer in his herd. They usually figure on carrying 15 poods (540 pounds) per sled, each sled being drawn by two deer, and each deer-man brings along extra animals to replace any that might give out on the trip.

As the deer-men arrive at the warehouses the sleds are loaded, each man being furnished with a list of the goods he receives, which he must give in at the warehouse at Cemechan when he arrives there, in order to check up his goods. At Cemechan he receives the remainder

of the money due for hauling. If he has lost or destroyed any goods on the way, he must pay for the same.

During the winter over 1,000 sleds leave Ola at different times, bound for Cemechan, in caravans of about 100 each. With a caravan of 100 sleds belonging to one outfit there would be about 10 men, each man managing a train of 10 sleds, he driving the head team, while the other teams are tied by their halter lines to the sled in front. As each sled has 2 deer and each train extra deer for emergencies, it will be seen that some 2,500 reindeer are used on this caravan route. Fifteen poods per sled makes a total of at least 15,000 poods (270 tons), and as the difference between the cost of the deer caravans from Ola and the old horse caravans from Yakutsk, both bound to the same place, is \$4 a pood, over \$60,000 is saved to the Government yearly by the establishment of this deer caravan route from Ola to the Kolima River. For this service the Russian Government has presented to Kalinkin a medal.

BUYING THE DEER.

At Ola resides a Cossack noncommissioned officer, who is in charge of the Government warehouse at that place. When we arrived we were received by the Cossack, together with the local starosta, who had sent a sled from the village the night before to meet us and show us the road, as the river and bay were breaking up and in places dangerous.

Upon making inquiries I found that two rich Tunguse deer men of this locality had recently been in the village, but the day before our arrival had returned to their herds, which were not very far distant. By this time, 29th of April, the rivers and bays were breaking up and the snow rapidly disappearing; scarcely any snow at all was left in and about the village and the surrounding hills looked pretty bare. Inquiries developed the fact that though possibly I might get as far as Gishega, it was very improbable. I decided, therefore, not to attempt getting to Gishega, but to remain at Ola, particularly as I had learned that the deer around Gishega were the smaller breed of Koryak deer, while the Tunguse deer herds occupied the country between Yarnsk and Okhotsk, Ola being the most important village of that section.

Having, therefore, dispatched to the two deer men who had just left messengers with letters requesting them to come to Ola, we took up our quarters at the post station. I had been led to expect an unwillingness on the part of the deer men to dispose of a large number of deer, but as I brought letters from the Okhotsk nachalnik to the Cossack and starosta at Ola, I hoped much from their assistance, particularly as the starosta, himself a Tunguse, was related to the two deer men, Mikhail and Inakentia Habarofsk, Mikhail being uncle to Inakentia. On the evening of April 30 the two deer men arrived at Ola. They were immediately taken charge of by the Cossack and starosta,

and it was some two hours before the latter appeared and announced that the two deer men were willing to deal with me.

This was something new in reindeer matters, and being the first time anyone had tried to buy a large number of deer at one time it had required a considerable amount of talk to finally get the Tunguse to agree to sell, and then they came to see me to discuss the matter and settle the question of the price. Five hundred were the most they would sell, though they owned between them some 10,000. We soon settled on a price of 10 rubles per head (about \$5) for 450 females and 50 males, all between the ages of 1 and 4 years, and delivered in good condition at a corral to be built near Ola. Then we came to a stumbling block which for some time appeared to be insurmountable, for they wanted to deliver the deer to me within thirty days. This was very unsatisfactory, as I would have to assume charge of the deer and have them cared for at my own risk, and of course shoulder whatever loss might occur between this time and July 30, the earliest date at which I could hope to get a ship to Ola ready to take the deer to Alaska. All this discussion required considerable time, for my interpreter had to change my English into Russian for the starosta, who in turn translated it into Tunguse for the deer-men, and of course vice versa for the replies of the deer-men to get to me.

At first the deer-men flatly refused to sell any deer unless I took them within thirty days, and would not listen to my proposition to furnish the deer upon my return with a ship in the spring. By dint of numerous questions it soon appeared that they wanted me to take the deer within thirty days because during the spring and summer the deer, weakened by their new and rapidly growing horns, suffer terribly from the deer fly and the mosquitoes, some of the animals being killed outright, while many others, becoming maddened by the pest, run away and are devoured by the wolves and bears, and the deer men were sharp enough to want me to shoulder such loss. They readily agreed, however, that this loss would not amount to 10 per cent, so I offered to pay 11 rubles (about \$5.50) per head, delivered on the arrival of my ship. The attraction of more rubles (about \$250) to compensate any possible loss, proved sufficiently strong, and they agreed.

They then announced the fact that they would be obliged to employ extra men to drive these deer to the coast and care for them until delivered to me, and wanted me to foot that bill, the usual charge for herding reindeer in this part of the country being 1 ruble (about 50 cents) a head per year. I thought the extra sum of 500 rubles (\$250) we had added to the price might cover that, but they thought differently, and as I wanted the deer very badly and they were not particularly anxious to sell, I finally agreed to pay 375 rubles (about \$187.50) for these extra herders, so that after four hours dickering we finally

settled that the two deer-men were to have a herd of deer on August 1 not farther than twenty-four hours' drive from Ola. As soon after that date as they received notice that I was ready to receive the deer, the deer-men were to deliver 500 animals in good condition in a corral at a specified place on the seashore. I was to pay 11 rubles (about \$5.50) a head for the deer and 375 rubles (about \$187.50) in addition for herding same, 1,000 rubles (about \$500) to be paid down to bind the bargain. As I have already stated, the Tunguse will strictly adhere to a bargain when paid part of the money down, whereas they might not consider the agreement binding if it was not clinched in this manner. The Tunguse appeared very loth to part with their deer in large numbers, and I am convinced it was mainly through the influence of the local officials that I was able to obtain what I did.

The following day, May 1, the deer men returned to their camp, for the fawning season was beginning and they were anxious to see how the deer were getting on. That day the weather, which had been threatening for some time, developed into a heavy rain storm that lasted all day, clearing away nearly all the snow left on the tundra and hills, and I subsequently learned that the deer men were several days getting to their herds, though only 100 miles distant, because of the bare hills and the difficulty in crossing the various rivers along their route.

Having now settled the purchase of the deer, I cast about for a suitable place to embark them. The village of Ola is situated at the mouth and on the east bank of a small river of the same name, which empties into a small bay separated from the large, open Ola Bay by a series of narrow sand spits, trending directly east and west, having between them three openings or passages. The ships must anchor about a mile outside the sand spits, and the middle opening is used by the barges to reach the Government warehouses. From the eastern shore and on a line with the sand spits, a small narrow peninsula makes out into the inner bay in a northwest direction, the end of which is sheltered from the sea by the eastern sand spit. Between this peninsula and the eastern sand spit is the third or eastern opening. This opening is the largest and deepest of the three, though it has the disadvantage of having the strongest current. As a ship at anchor outside the eastern sand spit would be but a mile and a half or two miles from the end of this peninsula, and this place, being sheltered from the sea, would permit the deer being loaded in any weather during which a boat could lie alongside the ship, it was decided to build the corral there. (See chart.)

The ice of the inner bay had not yet entirely broken up, and the place for building the corral being decided upon, ten dog sleds were employed to haul sufficient timber from the main land, where the trees were abundant. In two days that task was finished, but as

nothing further could be accomplished until the ground had thawed sufficiently to allow stakes to be driven, I turned my attention to the next question, moss, and in that struck the most difficult and annoying part of the whole work. I wanted the men of the village to gather the moss at once, while there was still sufficient snow to allow it to be brought in on sleds, for the moss had to be gathered on the hills some 2 or 3 miles back from the coast, there being very little on the tundra right along the shore. But these people had never gathered moss in quantities before and, for some reason, decided it would be easier to gather it when all the snow had disappeared. They agreed to gather the moss, however, and I left it to them. This was May 3, and on the 21st, when the starosta announced it was time to gather moss, my troubles began. First, there was the question of price, and the matter of bags in which to put the moss. Fortunately, the Cossack had some 600 empty bags in his warehouse, which he kindly loaned to me. They were old bags that originally contained flour for the black bread the peasants use, and about three-fourths the size of a coffee sack.

The people of these Siberian villages form what is called an "obshestvo," or community, at the head of which is the local starosta or headman, appointed by the district governor. The starosta's position is almost purely honorary, for he receives no salary, and, while the demands on his time are numerous, attending as he does to the affairs of the village, and overlooking the general peace and prosperity of the community, besides attending to and looking out for any officials that may come along, his only return is in shape of a medal of office, which he wears on all official occasions, and the privilege, when any work is done by the community as a body, such as unloading Government stores, putting up buildings and the like, of overseeing the job and standing around while the rest do the work, for which he receives the same pay as the rest. Added to this, of course, is the distinction of being the head man in the village. Outside purely governmental affairs, his authority over his fellow-townsmen appears to be nominal, and all purely local questions are decided by the majority of the "obshestvo" at a meeting presided over by the starosta. As a result, they have a meeting on each and every possible occasion. The fact that it was necessary to build a corral had to be talked over at a meeting, at which they nominated the price and the men to do the work, subject of course to my agreeing to the same. When I wanted some 2,000 bags of moss gathered and delivered, that matter called for a meeting; first, to decide if they were willing to do it, notwithstanding the fact that many of the townsmen were very poor and almost a charge on the community, and second, the price. It took some time to decide they were willing, and when the starosta announced that fact to me, he also announced they wanted 50 kopecks (about 25 cents) per bag, because all the moss had to be carried to the corral on their

backs after it had been gathered. I pointed out that it would have been easier to do this work while there was yet some snow on the ground, for the sleds would then have been useful. It was also suggested that as the people owned some fifty horses, they might be of service. But the starosta said the horses with one or two exceptions were too wild to be of any use. I announced I was willing to pay 20 kopecks per bag (about 10 cents), which was I thought a big price, whereupon the starosta went back to his assembled townsmen, and after about an hour returned with the information that he had finally persuaded them to agree to the terms.

The next day, therefore, the bags were dealt out and some fifteen men were sent for the moss, only to come back in the evening saying the moss was far back in the country and the work was too hard. This was not very promising, for without moss the deer could not be shipped. I labored with the starosta, and the Cossack added his voice. Another meeting was held, and the next day a new set of men, boys, and women, were sent out in another direction. The Cossack confided to me that the Ola town Tunguse were the laziest he had seen in his forty years' experience along this coast, and I was quite ready to believe him.

Five days later the second party returned, saying they had gathered some 300 bags of moss and had brought them to a place on the shore about 5 miles west of Ola and wanted to leave them there instead of boating them to the corral as originally agreed. I consented, as the ship could anchor off that place and the moss boated off as easily as from the corral. The people then announced that they would not gather any more moss, because the work was too hard for them; and I began to wonder where I was to obtain sufficient moss for the trip to Alaska, for I needed some 2,000 bags, and these people had quit work after bringing in but 300.

REINDEER AS PACK ANIMALS.

By this time the outlying Tunguse had begun to come in to prepare for their summer fishing, and I soon found them a very different class of people from the town Tunguse at Ola, for as soon as the former heard moss was wanted they came to me one by one and seemed very glad to have a chance to earn a few dollars. This made me independent of the town people, and I proceeded to make arrangements with the Tunguse who owned a few deer, and could pack the moss down to the coast on the deer's backs.

During my travel in the winter I had seen the reindeer used extensively with the saddle, especially in the deep snow; but while I had noted their occasional use as a pack animal, it was not by any means general. Now, however, in the summer I found they were used entirely as beasts of burden, and investigation soon developed the

reason. In the winter, when sleds can be used, two deer draw a load of from 15 to 20 poods, or from 540 to 720 pounds, thus transporting from 270 to 360 pounds per deer. That amount is not considered excessive, and the animals plod along with such a load day after day. When used as a pack animal 150 pounds is considered the proper weight for the pack, though some animals can carry 200 pounds and more, the illustration number 42 showing the writer on a deer's back, representing a weight of 200 pounds. In the summer, when there is no snow on the ground and sleds can not be used, the deer, to be utilized at all, must be used as a pack animal, while in the winter his strength is used to better advantage with a sled. Consequently he is never used as a pack animal in the winter, except on short distances when the snow is too deep and soft to use a sled.

As the fishing season approached hardly a day passed without bringing to the coast one or more Tunguse families, packing their household goods and children on the deer's backs. When a native wished to go from one camp to another he always rode his deer, if he had any distance to go, and it was no uncommon sight to see a Tunguse trotting along the shore deerback.

The span of a deer's back not being relatively as strong as that of a horse, the saddle is placed over the withers, so that the weight will be directly over the front legs, the strongest part of the deer's anatomy. The saddle has no stirrups and is not cinched tightly, as in the case of a horse, but is rather loosely secured by a thin hide strap going over it and under the belly of the deer. This, together with the movement of the shoulder blades and the motion of the skin on the deer's back from the thick hair and the underneath fat, renders one's seat on a deer saddle very insecure, and it is possible to keep on only after considerable practice. Though I managed to stay on after many trials, the motion is exceedingly uncomfortable, and as I could never quite free myself from the impression that I was only held on by force of circumstances, so to speak, I preferred to walk.

The more prosperous portion of the Ola community would not gather moss at all, but since the poorer portion was more or less a charge on the charity of the more prosperous portion, and it began to look as if the wandering Tunguse were to secure all the money for gathering the moss, the former forced the latter to work, and I finally obtained from the Ola people some 800 bags of moss. The moss was brought in and dumped in two piles, and as we only had 600 bags I had to be present each time the bags were emptied to see that they were all full. I had great difficulty in getting the Ola Tunguse to fill up the bags, while the deer Tunguse always gave good measure, and even brought in extra bagfuls to make up for any shortage. Some of the more enterprising Tunguse gathered their moss up the river, floated it down on rafts 50 bags at a time, and then took it up to the corral

in boats. In this way we obtained 1,300 bags from the Tunguse and 800 from the Ola people by June 15.

The ground now being thawed to a considerable depth, the corral was built. It took two days to complete it, and when finished consisted of two corrals, a small and a large one, with two long fences diverging from the larger one. The larger one was to be used to corral the deer, and the smaller one to hold a few at a time to be hobbled and carried to the boats.

It was now June 17, and the first steamer bound to Vladivostock was due on the 26th.

Not having heard from the deer-men since they left Ola early in May, I sent a messenger on horseback with letters (both men could read and write Russian). The messenger returned in nine days with letters from the deer-men saying the deer were on the way and would be at the rendezvous on time. These letters also informed me that one of the deer-men, Mikhail, had been very unfortunate with his deer during the fawning season, only getting about half the usual number of fawns. It seems there is a species of caterpillar in this region which affects the deer strangely. When these worms fall from the trees after the snow has disappeared in the spring, they crawl around in the moss, and the deer inadvertently eat them, their color being somewhat similar to that of the moss. The eating of this worm seems in the case of the females to cause a premature birth or a stillbirth; in the case of the males it causes a bowel trouble. In either case the health of the deer is affected only temporarily, and the females thus affected one year give birth to healthy fawns the succeeding year. But it sadly interferes with the increase of the herd. I am told that this trouble happens only where the deer graze in a wooded country, for this caterpillar feeds only on the trees. This state of affairs would not interfere with my purchase of deer, for I had stipulated that the age be between 1 and 4 years, the fawns being too small to stand much travel or the strain of transportation on board ship. Appended to this report is a translated extract from Dr. N. W. Schlugin's work on the Okhotsk-Kamchatka country, published in 1900, which furnishes an interesting account of other ills to which the Siberian reindeer are subject.

CHARTER OF THE "PROGRESS."

The steamer due on the 26th did not arrive on time, nor, indeed, for several days, and I began to fear lest she had not left Vladivostock at all. She put in an appearance on July 3, however, having been delayed by bad weather in unloading at Gishega. I took passage on her to Vladivostock, leaving at Ola my interpreter, Mr. Smith, to keep track of the deer and to watch the moss piles that they did not catch fire. I instructed him to inspect them every few days, and it proved a very

fortunate precaution, for ten days later he found them getting hot underneath, and was obliged to spread out the moss to dry. I had hoped that the moss, being spongy and not lying closely packed like hay, would not be liable to spontaneous combustion, for then it could have been preserved damp, and the deer would not need so much water on board ship.

Leaving Ola on the 5th of July, we reached Vladivostock the evening of the 16th, having called at the ports of Okhotsk and Ayan on the way. The following day I looked around for a steamer, but this being the busy season the only vessel open for charter was the Russian steamer *Progress*, of Vladivostock. We had met this steamer at Ayan, and I had inspected her and thought her suitable for the limited number of deer I had been able to obtain. Inquiries as to the probabilities of getting a steamer at Nagasaki or some other Japanese port convinced me it would be better to close with the owner of the *Progress* at once, even at what at first appeared a high price, rather than lose the time necessary to go to Japan. Besides, were I unable to find a suitable vessel available there, on my return to Vladivostock I might find the *Progress* under another charter. I therefore closed with the owner of the *Progress* for a charter of three months or less, at 10,000 rubles a month (about \$5,000), the coal, of course, being extra. The *Progress* was fitted with large, heavy boats and a steam launch, which latter item would very likely have been an additional expense had I been able to charter a Japanese steamer. For a trip of three months coal must be carried in the cargo space, and the owner agreed to furnish the lumber to floor over the coal, while I, of course, had to furnish lumber to construct the feeding troughs and such pens as were necessary.

The *Progress* returned to Vladivostock on August 31, but, having damaged her propeller, was obliged to go in dock to ship a new one, and she could not be turned over to me until August 2, Friday. Coal had to be taken on board, together with stores and the necessary lumber for flooring and pens. This work was hurried as much as possible and we left port on the evening of August 5, Monday. During the day I called on the governor of Vladivostock to pay my respects and was kindly furnished by him with an order addressed to the local authorities of the northern region, instructing them to aid me as much as possible in my undertaking. We were favored with good weather and arrived at Ola on August 12, a dense fog closing in just as we made the land.

EMBARKING THE DEER.

I had arranged before leaving Ola that our vessel would fly a distinguishing signal, and when we were sighted a messenger was to be dispatched at once to the deer herd to start it toward the corral, and a number of men sent on board ready for the work of loading moss and

deer. Shortly after the *Progress* anchored, Mr. Smith, having sent off the messenger, came on board, bringing the local authorities and the workmen. Having purchased empty bags at Vladivostock, I immediately sent the men off in two parties to sack up the moss at the different places while we were waiting for the deer to reach the corral.

The next day we loaded most of the moss from the pile near the corral before the deer arrived at the pen. They were very wild and it took some time to corral them. Twice when they had been driven within the wing fences and had passed the gate of the corral they succeeded in getting away and had to be rounded up again. The third time, however, they were safely penned. We began to embark them immediately and by dark 86 had been taken on board. We had two large boats which could take 20 or 25 at a load, and it required on an average a half hour to load each boat and a half hour to unload each at the ship. The small corral greatly facilitated the work, for the deer were caught and hobbled more rapidly than we could load. But the greatest delay in embarking the deer was caused by the tides at Ola. In the Okhotsk Sea there are two high tides each twenty-four hours, one being higher than the other. In the southern part of the sea these tides more nearly approach each other in strength, and at Ayan the rise and fall is about 6 feet. In the northern part of the sea, owing to the configuration of the land, the rise and fall of the greater tide is so considerable and the difference between the range of the two tides is so marked that, practically, there is but one tide a day, the smaller tide not rising sufficiently to make any practical difference. At Ola the range of the smaller tide is about two-thirds the greater, and the average rise and fall of the greater tide is 10 feet, while at full and change of the moon it is 14 feet. Of the three openings into the river and inner bay at Ola the one we used is the deeper, but even that had a depth of only 2 feet at low water, which was insufficient to allow a steam launch to pass.

We could, therefore, load only from half tide to half tide, and, as fog prevails in this country during the summer, generally only during the day. Added to this was the great strength of the current, so that with loaded barges our steam launch could just about make headway. The *Progress* was anchored some 2 miles from the corral, and when we caught the flood going in and the ebb coming out we could make one trip with the launch in two hours, but with the tide against us both ways it required four hours. Besides this, with a strong sea and ebb tide, the bar was risky with deer in the barges, so that the actual time we could load the deer was greatly limited. Fortunately the weather held good and the next day we got on board 156.

The following day, August 15, we succeeded in getting 85 on board, when an increasing sea breeze forced us to suspend work. The wind increased, and for the next two days it blew a gale. The 16th the

deer were turned loose from the corral to feed, and again penned the following evening. The night of the 17th the gale died out, and at noon of the 18th we again started to work, and took on board 73. The 19th we finished loading the deer, taking on board 24, making 428 in all, 8 of which had died from injuries received in loading. I had engaged two old Tunguse deer men to go on the ship to Alaska to feed and care for the deer, and these two men had been kept at the corral to examine each deer before it was put into the boat. Some twenty deer were rejected for various causes, for there had been recent cases of foot rot and horn disease among the Ola deer, and, as I was anxious not to get an infected animal, every deer was carefully inspected and none but those in prime condition accepted.

On the morning of the 19th, after receiving the last load, making 428 (359 females and 69 males), the remaining deer in the corral did not appear to be in first-class condition, and my two deer men advised me to take none of them. We therefore boated off the remainder of the corral moss pile, and I completed my transactions with the deer men, Mikhail and Inakentia Habarofsk, by presenting each with a .44 Winchester rifle and a set of reloading tools, which I had promised them at the time of the contract. In that part of the country the usual firearm is the old flintlock, a breech-loading rifle being so rare as to excite great curiosity and admiration.

I then brought up the subject of buying more deer the succeeding year, but was only partially successful, no amount of persuasion being sufficient to turn them from this final answer, that while they were willing to sell 500 next year if the herds were in good shape, they would not give their word to do so, for the selling of any deer was dependent upon whether they were fortunate or unfortunate with their herds during the winter, and they would make no agreement until the following spring.

I used every inducement to persuade these two men to make an agreement at once, but they refused to sell at any time more than 500, and concerning even that number they would make no agreement until winter had passed. It appears that occasionally in this region the snows are so deep during the winter that it is impossible for the deer to get enough to eat. At other times after an early and heavy fall of snow the weather turns warmer and rain falls. The succeeding cold weather freezes the wet snow and forms a very hard crust, which makes it extremely difficult for the deer to feed. These two vagaries of the weather often cause a heavy mortality among the deer during the winter, and the deer men would agree to no sale of deer before this season of danger had passed. I now dispensed with the services of Mr. Smith, my interpreter, and furnished him with the means of transportation to St. Petersburg, according to our agreement.

Having finished taking the deer on board, we steamed to the other

moss pile, a few miles west of Ola, but a heavy ground swell made it impossible to boat off the bags. During the night the swell moderated somewhat, and though there was still a bad surf on the beach in the morning the mate of the *Progress* went in, and by anchoring the boats with a heavy kedge succeeded in getting all the moss off, some 500 bags. It took nearly all day to do it, however, and it was not until 4 p. m. that the *Progress* left port. This was August 20, and some of the deer had already been on board seven days.

THE DEER EN ROUTE TO ALASKA ON SHIPBOARD.

On the passage from Vladivostock a deck was laid over the coal in the hold of the *Progress*, the afterhold space divided into two pens, and the forward space into three pens, with an ample number of troughs for feeding, the latter made water-tight. The deer were more or less equally distributed among these five pens, and, though they were far from being crowded, the experiment of the trip to Port Clarence has convinced me that the pens were too large, as the deer could roam around too much.

We had been favored with good weather from Vladivostock to Ola, but now our bad luck began, for after leaving the latter place we had rough weather nearly all the way north. We lost nearly a day while crossing the Okhotsk Sea by running off the course to keep the *Progress* headed to the sea in order to make smoother weather. The vessel was of course light, and with a heavy sea running, rolled considerably. This frightened the deer and made them restless. They would not lie down until worn-out, and then the smaller ones were often trampled upon and injured by the larger ones. I watched the deer very closely, together with my two Tunguse, and found that some of the deer would stand up and walk around until their hind legs gave way, spreading out sidewise from under them. In doing this they must have injured themselves in some way, for they never seemed to regain full control of their hind legs, and every deer thus affected eventually died, even though not trampled upon by the others. The first morning after leaving Ola 14 deer were found dead and thrown overboard. After that whenever a deer was found lying down with his hind legs spread out it was brought on deck to prevent being trampled on by the others, but none were ever able to stand alone afterward. They ate well, and some lived for several days, but all eventually died.

The Okhotsk Sea has the reputation of being boisterous, and it fully sustained its reputation while we were in it, but we expected smooth weather when we rounded the southern end of Kamchatka and entered the Bering Sea. After passing through the Kurile Strait and heading northward we had two days of good weather and the deer grew more quiet, appeared to pick up, and the daily death list decreased to 5, whereas we had previously thrown overboard as high as 25 in one

day. We had kept well under the Kamchatka coast, to make smoother weather in case of a westerly wind, but after our two days of good weather, the wind came out strong from the northeast, and soon kicked up a nasty sea, causing the vessel to roll badly. By the time we had passed Cape Navarin the wind had shifted and was blowing strong from the northwest, and, having the whole stretch of the Anadyr Gulf before us, we now had a bad northwest sea. Our course lay between Indian Point and St. Lawrence Island, but we headed up more to the sea, and pushed the *Progress* all she would go so as to get across the Gulf and under the land. This made the ship a little easier, but even then it was hard on the deer. We made the land near Plover Bay on the morning of the 29th, and stood along the coast. When we reached Indian Point, the wind was north and light, and as the sea appeared smooth we started for Port Clarence.

In a couple of hours, however, we struck rough water again, so we put back and anchored under Indian Point. Here we learned there had been a storm for the last two days and a heavy sea had been running. We therefore remained at anchor until the afternoon, when as the sea had gone down perceptibly we started again, heading just inside Cape Prince of Wales so as to keep the sea on the bow. Early the following morning we ran under Cape Prince of Wales, and thus had smooth water to Port Clarence, where we anchored off the Teller Reindeer Station, Friday, August 29. The last few days had been very hard on the deer, and when we reached Port Clarence 174 in all had succumbed, and but 254 of the original 428 were landed at the Teller Reindeer Station. This was terrible mortality, and, though I had expected some loss on the voyage, I never contemplated losing such an extraordinary number.

One cause of the fatality was undoubtedly the rough weather, yet I can not believe it was the main reason, because in 1898, when Dr. Sheldon Jackson brought 500 sled deer across the Atlantic, the ship was twenty-six days making the voyage and had very rough weather, but not a single deer died. The fact that these 500 deer were full-grown and shipped in the spring, while of the 428 brought over this fall none were over 4 years old, has, I am convinced, some bearing on the question. As my 428 deer were carefully inspected after they were hobbled, I am convinced they were in good condition. They were well cared for on board ship, had plenty of good moss and plenty of water. The captain of the *Progress* was very solicitous for the deer's welfare, and paid close attention to the ship, both night and day holding her up to the sea or setting the sails to steady her as much as possible, yet the deer stood the trip very badly.

In considering all the phases of this question, I have come to the conclusion that most of the deaths resulted from a combination of causes, some of which can be guarded against in any future shipments. I shall

enumerate these causes under four heads and in what I consider the order of their relative importance. First, the vitality of the deer in the early fall, the season at which the shipment was made; second, the age of the deer; third, the slipperiness of the deck; and fourth, the size of the deer pens.

First. Dr. Francis H. Gambell, general superintendent of the reindeer stations in Alaska, in his medical report on the hoof disease (page 91 of the Report on the Introduction of Domestic Reindeer into Alaska, 1900), states that "During the months of March, April, May, and June both the bucks and does cast their large, branching antlers, and nature begins immediately to renew them. It is wonderful to see the rapid growth of the horns. It is also wonderful to think of the material required and furnished to produce such an outgrowth. Surely it can not be wholly assimilated from the food ingested, for that would be too great a task for the digestive organs. It appears that nature is not relying on the crude material for the accomplishment of her great task. Simultaneous with the dropping of the antlers the ramifications of the blood vessels of the bones become ingested and every part of the osseous system is bathed in blood, presumably seeking for material for the new antlers. If a deer is killed at this time the marrow and bones will be a deep red instead of the pinkish color commonly seen. Accordingly, it would seem that the horns are grown at the expense of the bony framework. It would naturally follow that if the bones are depleted of their nourishment there is a loss of vitality." So long as the horns continue to grow this loss of vitality is not checked, and as the horns of the deer do not cease growing and become hard until about the middle of September, the month of August (the season of the year when the deer were embarked at Ola) found the animals still weak, and less able than at other times to withstand the strain upon their system produced by a rough voyage.

Second. Not understanding the above conditions at the time I purchased the reindeer, I procured animals ranging from 1 to 4 years of age, thinking it would be better to get them as young as possible. The Tunguse deer-men do not count a deer full grown under 4 years, and in these very young deer the system is probably much less able to withstand the loss of vitality consequent upon the rapid growth of the new horns than the more mature animals.

Third. The deck upon which the deer were penned was built of wood, and though it was well covered with old moss after the first day, still the urine from the animals rendered it more or less slippery, and as the deer were frightened by the rolling and tossing of the ship and would not lie down, the continual effort to stand wore them out, and being in that condition, some of them were unable to keep a footing on the slippery deck. As a result, their long and slender hind legs slipped out sidewise from under them, and they sustained injuries from which they never recovered.

Fourth. The 428 deer were divided more or less equally among the five pens constructed on the deer deck, so that there were 80 or more deer in each pen. This allowed too much room to roam about when they were restless, and very likely many of the smaller ones were injured by being trampled upon by the others.

The first of these causes can not be eliminated, since the deer must be shipped in the summer or early fall, when the new horns are growing, for that is the only time the northern seas are open to navigation; but the effect of this main cause can be minimized, if the second and third are removed, by selecting deer not less than 4 years of age and keeping the deer deck well covered with sand. As the deer breed up to 10 years of age, it is not so important, after all, to obtain the very young animals.

The fourth cause has no relation to the other three, and can be easily eliminated by constructing as many pens on board the ship as practicable, in order to have as few deer as possible in one pen, though this would of course reduce the number of animals a particular ship could carry.

In Dr. Sheldon Jackson's letter from Port Clarence, dated September 5, reporting my arrival at that place with the deer, he states that the Lapp herders at the Teller Reindeer Station attributed the loss of the deer mainly to starvation, saying that, though there was plenty of moss on board, the feeding-troughs on the ship were too high. This I can not believe, because the troughs were but a foot or 18 inches from the deck, and I had often noticed the deer eating the moss in the troughs in preference to that which had fallen loosely on the deck. The Lapps based their belief that the deer had died from starvation on the fact that when they cut up some of the dead deer they found little or no marrow in the shin bones. This in my opinion was not due to a lack of food, but to a condition that is very clearly explained in Dr. Gambell's report on the hoof disease, a portion of which I have already quoted.

RETURN TO WASHINGTON.

After unloading the deer at the Teller Reindeer Station the *Progress* left Port Clarence September 1 on her return to Vladivostock. Making a stop at St. Lawrence Island to land Dr. E. O. Campbell and wife, who had been taken on board at Port Clarence at the request of Dr. Jackson, we proceeded to Anadyr Bay, anchoring inside the Anadyr River on the evening of the 3d. The nachalnik had gone up the river to Markova, but had left the doctor and some Cossacks to look after the Government warehouses at the mouth of the river.

In this immediate vicinity were two herds of reindeer, each owned by a community of Chukchees, one numbering about 1,500 and the other about 800. We were fortunate enough to see and examine these ani-

mals, for it happened to be the time for the fall killing, and the deer were close to the Chukchee tents on the shore. These deer are fully as large as any I have seen in Alaska, though not quite so large as the Tunguse deer. They were of the same breed from which most of our Alaska reindeer have sprung, being heavy set, with short legs, like those of the Teller Station. We learned that there were much larger herds back in the country, some being owned by a few individuals, but when I inquired into the possibility of buying a large number at one time, the result was very unsatisfactory, the Chukchees not apparently being able to grasp the idea of a wholesale transaction, for these people have heretofore sold their deer one or two at a time. The doctor who had been stationed at Anadyr for seven years and understood the natives very well, was of the opinion that to obtain a number of deer at Anadyr they must be purchased during the winter in small lots, and then specially herded until shipment could be made in the spring, but he thought there were one or two merchants at Markova who might undertake such a proposition. I showed the doctor my letter from the governor at Vladivostock, and sent a letter to the nachalnik, requesting that the matter be looked into, saying that some vessel would very likely call at Anadyr next year in that connection.

The *Progress* then proceeded to Ola, where we landed the two Tunguse deer herders. I found here the Tunguse, Daniel Goveril, the reputed owner of 10,000 deer, but he was unwilling to arrange for the sale of a number of these animals. He explained that though he and his two brothers owned the herd, yet there were a large number of poor Tunguse in his country who were at times entirely dependent upon his herd for food, and he feared to dispose of a large number of his deer. Besides, his herd was very wild, and being kept some 500 miles in the interior, he was unwilling to undertake the task of driving them to a shipping place.

Proceeding from Ola to Ayan, the only real harbor in the Okhotsk Sea, I learned that the comparatively few deer in that section might be bought in limited numbers, but would cost \$15 and upward.

From Ayan the *Progress* steamed to Vladivostock, so that at the time of leaving the deer country I was unable to arrange for the purchase of any large number of deer for shipment next spring. Besides this, a new question has arisen, which must be disposed of before proceeding further with the transportation of deer from Siberia. When the *Progress* called at Ola on her return trip to Vladivostock, I learned that a recent order had been received from the Russian Government forbidding the sale of any more deer for transportation from Siberia without the written permission in each case of the governor at Vladivostock, whose authority extends all along the coast to Bering Straits. Had any of the Ola deer men been willing to arrange for a future purchase of deer, this would of course have prevented such arrangement.

On my arrival at Vladivostock, September 24, after terminating the charter of the *Progress*, I called on the governor and inquired into this matter. I learned that the order forbidding the exportation of deer had emanated recently from the Government at St. Petersburg, and it meant that special permission must be obtained at St. Petersburg for each future purchase, and that a limited number only would be permitted to be exported in any one year, this number not to exceed, say 400.

Having settled up all accounts in connection with reindeer matters, I left Vladivostock October 1 and proceeded to this city via Nagasaki and San Francisco, arriving here November 6.

SUMMARY.

In summing up the results of the past year's experience, we find that the only places where we can purchase and ship desirable deer on the coast of Siberia, aside from the region about Bering Straits, are Anadyr, Ola, and Ayan.

The deer of the Baron Korfa Bay region are Koryak deer, and are a small, inferior breed. The greater part of the deer in the Gishega region are also of the Koryak breed, not taking into consideration the interior Chukchee deer of that section. There are some of the large Tunguse deer around Gishega, it is true; but, even if they could be purchased, it is practically impossible to ship them, for in the Gishega Gulf vessels must anchor in the open roadstead, 8 to 12 miles from the shore, and this presents too many difficulties in embarking the deer. To purchase Tunguse deer around Gishega and drive them to Baron Korfa Bay for shipment is out of the question, for I am convinced that it is not practicable. Baron Korfa Bay is a Koryak country. The Koryaks are everywhere reported unreliable, and the Tunguse can not be persuaded to drive deer any distance into the Koryak country.

We must therefore turn to Anadyr, Ola, and Ayan. At Anadyr the deer must be bartered for, and this necessitates either the residence in that section of an agent of this department, supplied with an ample stock of trade goods, or an arrangement with some Russian merchant to collect the deer. In either case an entire winter, at least, will be required in which to buy the deer, and the number that might be purchased at Anadyr is problematical. At Ayan it is also problematical, and the deer would cost from \$15 upward, probably \$20 a head. At Ola the entering wedge has been placed, and I am quite confident that at least 500 can be purchased there at \$5 or \$6 a head. But to buy deer at Ola will necessitate a winter trip to that place, for as I have said the deer men are not willing to make a bargain before the worst of the winter has passed.

To transport the deer from either Ola or Anadyr to Port Clarence necessitates chartering a steamer for at least fifty days, but the expenses would be less from Anadyr, because a 1,000-ton ship must be used from Ola, while a 600-ton ship will do from Anadyr, for the reason that the latter place being but two days run from Port Clarence the deer can be crowded. The difference in expense would, however, be very little, say \$1,000, so that we may say that it would cost practically the same to transport 500 deer at one trip from either of these two places. The cost of the deer at Anadyr and Ola would be practically about the same, but Ola is, in my opinion, the more preferable place from which to ship, for while the deer cost a little more, the transportation costs a little more, and it means a winter trip to either place. The deer at Ola can be purchased in a lump and with money, whereas the deer at Anadyr must be bartered for in small lots, which requires much time. In case the Russian Government declines to allow more than 500 to be exported in any one year and the Department wishes 500 to be purchased next spring, then Ola will be the best place to obtain them, and the total expense of 500 bought and transported to Alaska will be about \$15,000, the greater part of the expense being the transportation and the journey of an officer to Ola in the winter.

I have referred in another part of this report to a merchant of Okhotsk, Mr. W. F. Bushuyef, whom I met in Yakutsk, and who expressed his willingness to enter into a contract to deliver 500 or more deer at Ola, ready for shipment, if given one winter's notice. If there was a reasonable certainty that Mr. Bushuyef could fulfill such a contract, the matter would be reduced to making that contract and then in the spring sending a ship to transport the deer to Alaska. But the natives with whom I, supported by the Russian officials, dealt, are the same natives with whom Mr. Bushuyef would have to deal acting as a private party, and my knowledge of the conditions at Ola leads me to believe that he could not fulfill such a contract with the reasonable degree of certainty that would be necessary to warrant the Department chartering a ship on the strength of that contract.

Thus far in my conclusions I have referred only to the deer on the coast of Siberia. There are in the interior many thousands of these animals, and though in my recent trip I had not sufficient time at my disposal to get in direct touch with the interior herds and their owners, I have gathered sufficient information to warrant the belief that a greater number of reindeer can be obtained from the interior herds than from the herds on the coast.

While the purchasing of deer in the interior presents, of course, greater difficulties than on the coast, since it involves driving the animals to the coast for shipment, these difficulties are not so great as to be insurmountable. There are Russian merchants in Siberia whose

extensive operations bring them in close contact with the natives who own the large herds of the interior, and these merchants can, I believe, collect the deer in large numbers and send them to the coast for shipment if they can be convinced that it will be profitable for them to do so.

The practical solution, therefore, of the problem of obtaining a large number of deer in a short time lies in placing in the hands of responsible Russian merchants the matter of collecting the deer and getting them to a place of shipment, thus leaving to this Bureau simply the question of transportation to Alaska.

I believe this can be done, provided the necessary permission is obtained from the Russian Government, and by sending an agent to Siberia early this winter he will have time to look well into this phase of the question and perhaps make satisfactory arrangements.

Very respectfully,

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(Through Sheldon Jackson, LL. D.,
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REINDEER IN SIBERIA.

[Translated from Okhotsk-Kamchatka Country, published in 1900, by Dr. N. W. Schlunin.]

The Northern reindeer comes from the Arctic Ocean, extending to the village Yavino on Kamchatka and farther south of Okhotsk. It seldom travels singly, but in small herds. It remains sometimes for the summer in deserted places of Kamchatka, where we once happened to kill one in August, on the east shore opposite the island of Staritchkoff.

A domesticated deer is an invaluable animal to the native, satisfying nearly all his wants in life. The animals vary in size and weight; as, for instance, a Kamchatka and Gigiga reindeer is smaller than a Gigiga wild one; a Gigiga male deer is equal in size to an Okhotsk female deer. An Okhotsk calf (young deer) is equal in size to a Lamut female deer.

In winter the reindeer feeds exclusively on moss, which the natives distinguish in five different kinds, some kinds being wholesome in autumn, others in spring. In summer it feeds mostly on willow leaves and some grass. The fondness of deer for mushrooms is so great that they will never miss a chance to eat them.

They herd from September 1 to October. The fawning season lasts from about March 25 to April 23. Those who bear latest always retain their horns longest. They bring forth in their third year one, rarely two, young ones. The total offspring of a female deer is reckoned at

ten. Some deer remain sterile and are called "katiams;" they are recognized by their straight horns and rough shape. The horns of a newly born fawn remain soft for about two months, and at the end of the summer have reached one-quarter of their full length. They keep growing until the deer is 3 years old, and the forms of the antlers do not change. The reindeer, notwithstanding its endurance of the cold and travel, suffers badly from the deer-fly (*tabanus*), as well as from various diseases. This fly becomes a positive scourge for the animal.

We have brought from our travels another specimen of larva, which, upon examination kindly made by Mr. Portchinsky, proved to belong to a deer-fly (*Oedemagena tarandi*).

The Tungus claim that there are certain small worms in the willow leaves which upon eating the deer catches the disease. This disease is called the tungus "edermian." The animals begin to cough, become very thin; later the falling out of hair takes place.

Among other deer diseases we will mention the "kapata" or the disease of horns, the "djach" or the hoof disease, and the "tatar" or scab disease.

The kapata, or suppuration on the root of the horn, which results later in brain inflammation, is caused by a bruise or fracture of the horn at its base or point. In the first instance a swelling forms around the horn, and in the second the development of the larva (eggs) of the flies takes place, which reach the inside through the winding channel of the horn, causing the infection.

The "djach" first begins with an inflammation and small swelling near the hoof, which causes pain in the small hoof gland, located between the toes above the hoof. The cause of it is unknown. The Tungus have noticed that in spring, when the grass begins to wither, owing to the development of some worm the size of a pin head, the hoof disease appears at the same time. At first the disease is limited to places near the hoof, producing sores and boils; later, if such do not open, the infection of the chest organs begins with sores under the skin, while nearly all the abdominal organs are apparently left untouched. We doubt that the "djach" resembles the Glis of horned cattle, it is probably a particular and different disease.

The "tatar" begins with an itching in the skin and a subsequent falling out of the hair, after which the skin resembles a kid glove. Later pimples and splits appear, which are covered with a dry peel. The skin taken from a fallen deer is pierced with little holes, as if made by small shot.

There is one more parasituous disease, when a long and thin worm, resembling a thread, is found under the skin of a deer. The meat of a deer thus infected is, the Tungus say, gelatine-like, and they have a dislike for it.

The deer, on which the life of a wandering native depends, serves

the latter for transportation purposes, although at present there is noticed an inclination among the Tungus and Koriaks to keep dogs for the transportation of wood and for trips to settlements, for it is known that it is quite impossible to approach any settlement with a deer; the dogs upon scenting the animal will break away from their chains and attempt to tear the latter to pieces. All the wandering and shifting from one place to another at a distance from settlements is carried on with reindeer. The Koriak likes the traveling with deer as well as the animals so much that he abhors the traveling with dogs.

On special occasions the owner of a herd of reindeer hitches his best white deer to a light sleigh and speeds with it arrow-like through the open, without distinguishing ravines, hollows, and hillocks. Throwing back its horns and shoving out its tongue, the animal stretches itself and makes big jumps, throwing back piles of snow. On a hard, smooth road the hoof of a deer does not sink; otherwise, in most cases, it sinks in where a dog would hardly leave a trace of its nails. This hazardous driving on small distances is characterized by its speed, and one must be very skillful to keep to his seat, especially when the speed often reaches 14 to 18 versts per hour. Such speed tires the animal very much and sometimes ruins it entirely.

Such riding, however, is exceptional and should not be taken into consideration, as it is rather a sport than a necessity. The Oust-Maisky Tungus, going from Nelkan to Ayan for tea, usually arrives there in six or seven days. With a load of tea, the distance is covered in approximately twelve days, or by six hours of daily travel at $3\frac{1}{2}$ versts per hour.

The wandering Koriaks, although not being obliged to furnish transportation, readily consent to let deer vehicles not only for money, but even free of charge, as, for instance, to the Gishega missionary, whom they don't even like. A deer vehicle with two deer usually runs in the start at a good speed of 7 to 8 versts per hour, but the animals soon tire. We had no chance to experiment with very fast riding, but according to statements of Tungus it is possible to make, with the same deer, about 150 versts in twenty-four hours, and by changing deer on the way 250 versts.

The winter deer vehicle differs from that of the dogs' by simply being somewhat larger. A pair of reindeer (males) usually haul 15 to 25 poods of freight. A deer does not serve for transportation and traveling purposes more than ten years.

The reindeer are loaded and ridden on the shoulder blades and even neck. The reindeer saddle is so small that it is only possible to keep on it after a good practice. In addition it has no stirrups or saddle-girth, and is but tied with a thin leather string. A leather strap, which clasps the animal's neck, is a substitute for a bridle. Owing to the motion of the reindeer's back, caused by the thick and short hair

on it and by the fat under the skin, the riding a reindeer is very inconvenient and unsafe.

A reindeer is of more importance to a wandering native than a dog to a settled one. The deer does not only carry the wandering native, but also feeds, clothes, and warms him. Reindeer breeding, if it does not require the storing of food and the building of winter premises, as is the case with horse and horned cattle breeding, is, nevertheless, a more difficult task than the latter two. The main difficulties of reindeer breeding consist in the daily and constant watching of the animals, which scatter on the vast plains in search of food or disperse in different directions on account of a snow storm, or, if lacking proper watch, they fall a prey to wolves, which track the deer.

Big herds of reindeer eat up the moss very rapidly; as moss forms most of their food in winter, the owner is forced to search for new pastures. According to statements of Koriaks and Tungus, the moss on the pastures requires three years to grow again. Some Koriak herds number from 10,000 to 18,000 head, and owing to scarcity of moss they are obliged to divide their herds into parts, and also to constantly change places. On the Gishega plains alone were named the following Tungus and Koriaks who possess big herds: Ammiauzgin, 4,000; Vatchagirin, 5,000; Khatting, 10,000; Okko, 12,000; Arma, 6,000; Aphanasy, 4,000; Allalog & Son, 12,000; Kulie, 15,000; Typega, 5,000; Alvatchi, 5,000; Khatchilucht & Bro., 10,000; Ermito, 5,000, and the Tungus: Michael, 5,000; his brother, 3,000; Elijah, 6,000; Theodor, 15,000; Abraham, 18,000. A total of 140,000 head.

In summer the reindeer food is more abundant, as the animal feeds mostly on willow leaves, grass, and mushrooms, but then in warm weather it suffers more than at other times. Besides its suffering from stings of mosquitoes and midges, which cause chlorosis, it suffers from the "tabanus" flies, the mere sound of which brings the animal into a furious state of nervousness. Two groups of these hard-winged insects pursue the reindeer for the purpose of laying their eggs under its skin or in the nose cavity, where later the worms develop, in the following spring turning into hard-winged insects.

Of reindeer diseases we have already spoken.

Besides suffering from disease, the reindeer has to withstand severe winters and heavy snows. The winter of 1896-97 proved the bad effects of these. It distinguished itself by unusual severity and frequent snowstorms, many of which we experienced during our travels. All the moss fields were piled up with snow to such an extent that the reindeer could not pierce to the moss with their hoofs. The natives were forced by these misfortunes to shift from the plains to the seashore in the hope of finding less snow there; unfortunately it turned out to be the same everywhere.

The reindeer furnishes the wandering native the following products and materials:

(1) First of all the chief nourishment is the meat, which is usually cooked, but Tungus cut it into small, thin pieces, which are dried in the sun in summer and on a wood pile in winter. The natives eat meat in large quantities. A deer of average size furnishes from 4 to 5 poods' weight of meat and bones, which support a small family for two days. For the maintenance of the dogs one deer per day is also required.

(2) The fat is partly eaten up with the meat and partly collected, and, after having been melted, is employed for light. In a small pot, made out of stone or tin, it burns very brightly and does not produce much smoke, which does not suit the Koriaks, as much smoke, as from seal fat, is needed by them for the smoking of skins, of which we shall speak further below. The marrow of the deer bones and of the tongues form a dainty dish for the native, first, in its raw state, and second, when cooked or smoked.

(3) Of the most importance is the hide, which has three grades. The hides of fawns, either taken out of the womb or from such as died soon after birth, are called "vyporotok;" owing to the tenderness of their hair, such skins are used as lining for warm clothes. A one-half year old deer furnishes a hide called "pyshik," which is considered best for fur clothing. The hide of a grown deer, in its untamed state, is used for bedding purposes. The skin from the legs is especially used for making shoes, which are called "kamassos."

The hides are also subjected to various processes of dressing for different domestic purposes. We wish to remark, however, that all the work and care of the dressing of deer hides, the making of shoes, dresses, and also thread out of the sinew, forms the main duty of the women in winter.

Observing the lives of the natives, in the course of two years, we have always wondered at the assiduity, inventiveness, and a certain taste which the native women manifest, and especially those of the Koriak tribe, in household matters. We will take, for instance, the "koochlianka," which, in order to be made from a deer hide, must necessarily be first well dried and aired, after which the women, spreading the hide on a board with the hair facing down, serape the upper surface with a knife, removing whatever fat, dry pieces of flesh, and sinew may be left. After such manipulation the hide becomes soft and suitable for sewing. The same means are employed for dressing "vyporotoks" and "pyshik" hides.

The dark and colored hides are used mostly for traveling "koochliankas," and the light colored for fur lining. In order to make the latter pliable they are subjected to a more careful and finer dressing. This is done by the women beating and rubbing them with a special

stone called "khalbol" and then scraping the skin with an "aut," which is a round knife placed in the center of a handle. Sometimes the inside of a fine koochlianka is dyed in a light brick color. The dye is prepared as follows:

One color of peel is taken from alder trees, and often peel from poplar trees is also added, the quantity of which depends on the color that is wanted. The above is boiled in water, in which, after being strained, the hide is placed, or which is applied to the hide by hand. After this the hide is folded in four, with hair on the outside, and is left to lay for a while, and then it is kneaded by hand. Later, when the hide dries up, it is crumpled up with the feet until it obtains an even softness all over.

If a black color is desired on the inside of the skin, then to the alder-peel mixture the Koriaks simply add dirty water which is left in the basin of the grinding stone, and apply this solution to the skin. Especially for hair dyeing the fatty matter must be entirely removed. For that purpose the skins must be well washed in soap water or an infusion of ashes, upon which an even coloring is obtained.

Hides thus dyed serve for adornments of koochliankas, kamleykas, oupovanas, and aprons.

The dressing of a "rovdooga" is more complicated and requires more time. If a rovdooga is wanted for covering a hut or to serve simply as a cover, then not much pains is taken in the selection of a hide. We have already mentioned that the deer hide is sometimes pierced with little holes as a result of an extensive development of the larva (worms) of the insect. The deer is sometimes killed before these worms have fully developed and worked their way out through the skin. Looking through such a skin at a light it has the appearance of some strange mosaic and after dressing looks uneven and shaggy. It is still worse, however, if the worms have already worked their way out from under the skin, leaving in the places of their development big holes. Such skins soon tear apart and do not protect from rain. To select a deer hide entirely free of holes is exceedingly difficult, as in the course of a summer the insect will have succeeded in laying a number of its eggs under the skin of the animal.

The dressing of a rovdooga skin begins with the smoking of the same. For this purpose the latter is sometimes hung up in the hut near or over a wood pile or a burning pot with seal oil, but in most cases preliminarily serves as a bed curtain, which in the course of the winter will have been well smoked through. In such a way the native prepares a rovdooga exclusively for his own use, while those for sale he prepares by a simpler method. After it is kneaded and the veins torn off by the use of an "aut" the hide is hung up above a wood pile for about ten hours or a whole day. It is then moistened with warm water, rolled up with the hair inside and is left till morning, when the

removal of the hair with an "aut" having a long handle begins. The hair removes easily, as the skin becomes tainted with the damp during the night. The hair can be removed still faster and better if the hide from a deer just killed is rolled up with the inside out and left in a warm place. On the following day all the hair is easily removed.

The further dressing of a rovdooga depends upon the purpose for which made. If it is designed for a cover against rain it is only a little dried and crumpled, but necessarily smoked, to prevent it from souring on account of rain and dampness. If a rovdooga is designed for the various domestic wants, for instance, tarbasses, aprons, kamleykas, and oupovanas, it is then most carefully scraped out with an "aut," is well crumpled several times, and in order to make it still more pliable it is twice greased with a mass composed of deer and fish livers. After such manipulation it is left rolled up for a few hours and then is again kneaded with a khalbol. At last the rovdooga has the appearance of fine chamois. It is sold at $1\frac{1}{2}$ rubles by trading; to translate into a comprehensible language, it means for 1 brick of tea or 1 pound of Russian "papushka." The dressing of the skins requires two to four days, or, in other words, a woman's labor is valued at 10 to 15 copecks per day. A bedding, i. e., a deer hide in its raw state, is valued here at 50 to 60 copecks. A rovdooga is also dyed and used in that form for tarbasses, pants, and gloves.

After an ordinary dressing a rovdooga is first of all smoked for about three to four hours on rotten larch leaves, and then it is folded up and left to saturate well with smoke. Later it is placed in an ordinary cold solution of alder peel, and when it becomes well soaked is rubbed well with dirt from the grinder by the aid of a rabbit foot or a piece of deer hide, and is dried. If the dying is uneven and faint the same operation is repeated again.

"Kamassa" is called the part of the hide which is taken off the legs. It is especially used for making shoes, as it does not get wet or stick to the snow. A piece of dry kamassa soon becomes soft in the hands of an experienced Koriak woman. In this case, besides the usual kneading and scraping, another process for softening is employed, which is a purely primitive one. After the usual manipulations the woman crumples it with her teeth, moistening it at the same time with saliva. To have some idea of the difficulty of the work it should be taken into consideration that one pair of tarbasses requires twelve to sixteen pieces of kamassa, and a pair of long ones twenty-five to thirty pieces, which the woman has to work upon for two to three weeks, neglecting for a while her house work. In trading, in accordance with the finish and color, a pair of tarbasses is sold for 3 rubles, i. e., for 2 to 3 bricks of tea.

The sinews are also taken off the deer legs and are dried; the women make thread out of them, which is used exclusively for sewing shoes,

clothes, carpets, and oupovanas. There is no cotton thread for sale, and we will remark that ordinary thread would not suit these purposes and especially for sewing tarbasses, for in summer as well as in autumn the shoes of the natives are constantly damp from the marshy ground, and by ordinary sewing a pair of tarbasses could not be worn one month, as the thread would decay.

The dressing of sinews begins with their first being split into narrow strips and then divided into fibers, which are twisted and rolled by hand. This is rather trying work. In a day, as we chanced to witness, a woman can prepare fifty to one hundred threads, each about two-quarters in length.

The splitting of sinews and preparing thread from the same is employed by the Koriaks as good test of the patience and skill of a newly wedded woman.

(4) The deer's blood is also utilized. For this purpose the old method of killing the deer was carried on by the Tungus. A noose was usually thrown around the animal's neck and tied to a tree, then placing a stick along the animal's body it was dragged back and thus strangled. This was done with the purpose of avoiding loss of the blood, which is, however, not eaten by all natives. At present the deer is simply being slaughtered with a knife, which is stuck into the animal's heart, but the blood is carefully collected in a separate vessel and is afterwards used for food. Blood that has flowed into the viscus (inside) is left for some time in the hide in order to soften the latter and then serves for dog food.

OFFICIAL PAPERS RELATING TO LIEUT. E. P. BERTHOLF'S EXPEDITION TO SIBERIA.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
Washington, D. C., December 29, 1900.

SIR: At the request of the Department of the Interior, the Russian Government, in 1896, granted permission for this Bureau to send agents into Siberia for the purchase of reindeer. But experience has shown that unless the reindeer are purchased beforehand and collected near ports on the coast, the United States steamer is delayed too long in the process of effecting these preliminaries, and the consequence is that the short season in which the transfer of reindeer is possible in these northern seas passes away with slender results. I am informed that in Siberia, around the northern end of Okhotsk Sea, is a breed of reindeer much larger than those we have been purchasing in the neighborhood of Bering Straits. I am also informed that First Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, Treasury Department, who has had much experience in the purchase

of reindeer for this Bureau, has signified a willingness to go to Siberia this winter to gather needful information concerning these larger reindeer, and if possible procure a number for the herds now in Alaska.

The Secretary of the Treasury has been consulted and has expressed his willingness to detail this officer for this duty for such length of time as may be necessary to complete the same. The work will probably require from six to ten months.

The salary of Lieutenant Bertholf will be paid, as usual, from the regular appropriation of the Revenue-Cutter Service for that purpose. His traveling expenses while on this duty will be paid from the reindeer fund for the present fiscal year, and \$5,000 shall be set aside from this fund for such traveling expenses and the purchase of such reindeer as he may be able to procure.

I have the honor, therefore, to request that the Secretary of the Treasury be asked to direct First Lieut. Ellsworth P. Bertholf to report in person to the Secretary of the Interior for temporary duty in Siberia in connection with the work of this Bureau in procuring reindeer.

Very respectfully, your obedient servant,

W. T. HARRIS, *Commissioner.*

THE SECRETARY OF THE INTERIOR.

TREASURY DEPARTMENT,

OFFICE OF THE SECRETARY,

Washington, January 2, 1901.

SIR: You are hereby detached from the United States steamer *Bear*, and will report in person to the Secretary of the Interior for temporary duty under that Department; this assignment to continue until otherwise directed by the Secretary of the Treasury.

You will acknowledge the receipt hereof.

Respectfully,

O. L. SPAULDING,
Assistant Secretary.

First Lieut. E. P. BERTHOLF, R. C. S.,
Washington, D. C.

DEPARTMENT OF THE INTERIOR,

BUREAU OF EDUCATION,

Washington, D. C., December 26, 1900.

SIR: In the furtherance of the work of this Bureau in procuring reindeer in Alaska, I am arranging to send Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, via St. Petersburg to Siberia to gather needed information concerning the larger breed of reindeer in the neighborhood of the sea of Okhotsk and, if prac-

ticable, procure a number of the same to cross with the smaller breed in Alaska. As it is important that he be provided with letters of introduction, I respectfully recommend that a letter be written the Secretary of State requesting that he give Lieut. Ellsworth P. Bertholf, United States Revenue-Cutter Service, a letter of introduction and recommendation to the American ambassador at St. Petersburg, and further request that he solicit from the Russian ambassador a letter commending Lieut. Ellsworth P. Bertholf to the courtesies of the Russian governor of eastern Siberia.

Very respectfully, your obedient servant,

W. T. HARRIS, *Commissioner.*

The SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,

BUREAU OF EDUCATION,

Washington, D. C., January 3, 1901.

First Lieut. ELLSWORTH P. BERTHOLF, R. C. S.,

Washington, D. C.

SIR: Having been detailed by the honorable the Secretary of the Treasury for duty with this Bureau in connection with the introduction of domestic reindeer into Alaska, you are informed that since this experiment has been in progress the various expedients resorted to by this Bureau for the purchase of reindeer in Siberia for Alaska because of the many difficulties to be overcome have only secured about 1,000 deer. With the exception of the 186 reindeer brought over in 1899, all the reindeer imported into Alaska from Siberia have been brought over by the revenue cutter *Bear*, at such times as she could be spared from her regular duties.

Owing to the short time each season that this vessel can devote to the work, and the fact that the deer must be bartered for in small lots at different places, the process of importing deer has progressed very slowly, and in the eight years that this work has been in progress but 997 reindeer have been brought into Alaska from Siberia. From these 997 deer have sprung the present herd of 3,323.

The useful and important part these reindeer will play in the development of Alaska has been so fully demonstrated during the past four years that there have been many applications from private parties who are desirous of obtaining reindeer, and who wished to purchase from the Government such numbers as will enable them to start herds for commercial purposes. As the limited number of deer now at the disposal of the Government will not allow of this, it is the desire of this Bureau to procure a sufficient number of deer to place this important industry on a firm and lasting footing.

The conditions are so favorable that the reindeer born in Alaska are much larger and heavier than the parent stock from northern Siberia, from which they have sprung. This Bureau has reason to believe that in the neighborhood of Okhotsk Sea a breed of reindeer flourishes that is larger in stature than those we have been importing from northern Siberia, and it desires for this reason to obtain a supply of reindeer from those herds.

You are therefore directed to proceed via St. Petersburg to the neighborhood of the Okhotsk Sea and make thorough investigation into this subject, collecting such information and data as may aid this Bureau in prosecuting the work, and, if practicable, to purchase a number of reindeer and cause them to be driven to Admiral Skobolof Harbor, Baroness Korfa Bay, on the eastern coast of Siberia, provided the reindeer can reach this point not later than May 15, 1901.

With a view to facilitating your work you will be appointed a special disbursing agent of the Interior Department, and \$5,000 will be placed at your disposal for the purpose of defraying the expenses of this work. You are informed that you are entitled to be reimbursed for expenses incurred in traveling from the U. S. S. *Bear*, Seattle, Wash., to this city to consult concerning this work.

It is promised by the honorable the Secretary of the Treasury that a vessel of the United States Revenue-Cutter Service shall call at Baroness Korfa by May 15, 1901, or, if the ice should prevent, as soon after May 15 as practicable. The vessel will take on board and transport to Alaska a number of the reindeer you may have collected. Should you not communicate with the vessel by May 15, the commander of the vessel will understand that you have been unable to get there, and have left the country by some other route.

Dr. Sheldon Jackson, general agent of the Bureau of Education, will take passage on this vessel, and you will place yourself in communication with him on the arrival of the vessel, and receive his further directions for the performance of this work.

Very respectfully, yours,

W. T. HARRIS,
United States Commissioner of Education.

DEPARTMENT OF STATE,
Washington, January 4, 1901.

THE SECRETARY OF THE INTERIOR.

SIR: I have the honor to acknowledge the receipt of your letter of the 3d instant asking that this Department may facilitate the mission of Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, who has been selected by the Commissioner of Education for the purpose of gathering information concerning the reindeer of the

region in the neighborhood of the Sea of Okhotsk, and, if practicable, of securing a number of them to cross with the smaller breed in Alaska.

In reply I have the honor to inclose a letter introducing Lieutenant Bertholf to the diplomatic and consular officers of the United States in Russia.

I have also instructed the United States ambassador at St. Petersburg to aid him as far as lies in his power.

I have the honor to be, sir, your obedient servant,

DAVID J. HILL,
Acting Secretary.

DEPARTMENT OF STATE,

Washington, January 4, 1901.

His Excellency CHARLEMAGNE TOWER,

St. Petersburg.

SIR: The Secretary of the Interior has selected Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, for the purpose of gathering information concerning the reindeer of the region in the neighborhood of the Sea of Okhotsk, and, if practicable, of securing a number of them to cross with the smaller breed in Alaska.

Lieutenant Bertholf will proceed to Siberia via St. Petersburg.

You will advise the Russian Government of the nature of his mission, and request such letters to the proper officials as will facilitate his efforts.

I have given Lieutenant Bertholf a letter of introduction to the diplomatic and consular officers of the United States in Russia.

I am, etc.,

DAVID J. HILL,
Acting Secretary.

DEPARTMENT OF STATE.

Washington, January 4, 1901.

To the diplomatic and consular officers

of the United States in Russia.

GENTLEMEN: At the instance of the Secretary of the Interior I take pleasure in introducing to you Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, who is proceeding to eastern Siberia for the purpose of gathering information concerning the reindeer of the region in the neighborhood of the Sea of Okhotsk, and, if practicable, of securing a number of them to cross with the smaller breed in Alaska.

You will as far as lies in your power facilitate Lieutenant Bertholf's mission.

I am, gentlemen, your obedient servant,

DAVID J. HILL,
Acting Secretary.

DEPARTMENT OF THE INTERIOR,
Washington, January 3, 1901.

MR. ELLSWORTH P. BERTHOLF,
First Lieutenant, United States Revenue-Cutter Service.

SIR: In connection with your duties in the purchase of reindeer in Siberia, you are hereby designated a special disbursing agent and required to file an official bond in the penal sum of \$10,000.

Very respectfully,

THOS. RYAN, *Acting Secretary.*

(Through the COMMISSIONER OF EDUCATION.)

DEPARTMENT OF THE INTERIOR,
Washington, January 4, 1901.

THE SECRETARY OF THE TREASURY.

SIR: On the recommendation of the Commissioner of Education, I have the honor to request that First Lieut. E. P. Bertholf, of the Revenue-Marine Service, who has been detailed to proceed to eastern Siberia via St. Petersburg for the purpose of purchasing reindeer, and has been designated by this Department a special disbursing agent and required to give bond in the sum of \$10,000, be granted special permission to receive and retain in his possession the sum of \$5,000 with which to meet the expense of travel and to make the proposed purchases.

Very respectfully,

THOMAS RYAN,
Acting Secretary.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, January 5, 1901.

THE SECRETARY OF THE INTERIOR.

SIR: I have the honor to inclose herewith for transmission to First Lieut. E. P. Bertholf, of the Revenue-Marine Service, letter of this date, authorizing him to keep in his hands, at his own risk, of funds advanced to him for disbursement while acting as special disbursing agent in eastern Siberia, an amount not to exceed at any time \$5,000.

This action is taken in compliance with your request, dated 4th instant.

Respectfully,

L. J. GAGE, *Secretary.*

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, January 11, 1901.

THE SECRETARY OF THE INTERIOR.

SIR: I have to acknowledge receipt, by reference from you, of the official bond of E. P. Bertholf as special disbursing agent for the

Interior Department. The said bond, which is given in the penal sum of \$10,000, and bearing date of January 3, 1901, will be placed on file in this office.

Respectfully,

L. J. GAGE, *Secretary*.

FEBRUARY 18, 1901.

The SECRETARY OF THE INTERIOR.

SIR: I have the honor to submit herewith a copy of a dispatch received from Lieut. E. P. Bertholf, Revenue-Cutter Service, who, in the progress of his mission to gather information concerning reindeer in the neighborhood of the Sea of Okhotsk, has reached St. Petersburg.

To explain the dispatch, I inclose herewith a copy of the letter of the Acting Secretary of State, January 4, to his excellency Charlemagne Tower, ambassador extraordinary and plenipotentiary, St. Petersburg; also the letter of the Acting Secretary of State to the diplomatic and consular officers of the United States in Russia, commending Lieutenant Bertholf to their cordial assistance.

I respectfully suggest that the matter be referred to the honorable the Secretary of State for such action as he may see proper.

I have the honor to be, very respectfully, your obedient servant,

W. T. HARRIS, *Commissioner*.

[Cablegram.]

PETERSBURG, RUSSIA, *February 18, 1901.*

COMMISSIONER OF EDUCATION,

Washington, D. C.:

Been here since 4th instant. Nothing accomplished. If possible have State Department telegraph embassy to hasten the necessary papers. Eighty days are necessary to reach Gishega (on the Sea of Okhotsk). If I can not leave before end of February impossible reach there before the snow melts, and I must wait through the summer and fall.

BERTHOLF.

[Cablegram.]

PETERSBURG, RUSSIA, *February 20, 1901.*

COMMISSIONER OF EDUCATION,

Washington, D. C.:

Official arrangements about completed. Impossible now reach Gishega unless proceed from Vladivostock by steamer leaving July. Will thus reach Gishega August and have entire winter for operations. Advise doing so. Letter mailed to-day particulars. Will await reply to same.

BERTHOLF.

[Cablegram.]

FEBRUARY 21, 1901.

Lieut. E. P. BERTHOLF,

Care of United States Embassy, St. Petersburg, Russia:

Second cable received. When official arrangements completed, proceed to Irkutsk and await my letter. Do not favor Vladivostock and sea route. Prefer through Yakutsk and Okhotsk.

W. T. HARRIS, *Commissioner.*

[Cablegram.]

PETERSBURG, RUSSIA, *February 22, 1901.*COMMISSIONER OF EDUCATION, *Washington, D. C.:*

Cable received. Leave here to-morrow; leave Moscow first train 27th. Twenty-two days necessary letter reach Irkutsk from Washington. Suggest cable instructions Irkutsk, care governor, or Moscow, care Slaviansky Bazaar, to avoid delay.

BERTHOLF.

[Cablegram.]

FEBRUARY 23, 1901.

BERTHOLF, *Slavinsky Bazaar, Moscow:*

Need not await letter Irkutsk. Proceed Gishega via Yakutsk, Okhotsk. Secure full information regarding reindeer. Write you Gishega.

W. T. HARRIS, *Commissioner.*

DEPARTMENT OF STATE,

Washington, March 14, 1901.

The SECRETARY OF THE INTERIOR.

SIR: Referring to the Department's letter of January 4 last, I have the honor to inclose for your information copy of a dispatch from the United States ambassador at St. Petersburg, reporting as to the action taken by him in regard to Lieutenant Bertholf's mission to Siberia at the instance of the Commissioner of Education.

I have the honor to be, sir, your obedient servant,

JOHN HAY.

No. 394.]

EMBASSY OF THE UNITED STATES,

St. Petersburg, February 27, 1901.

The Hon. JOHN HAY,

Secretary of State, Washington, D. C.

SIR: In compliance with the instructions contained in your dispatch, No. 213, of the 4th of January, 1901, relating to Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, I have the honor to report to you that Lieutenant Bertholf presented himself at

this embassy on the 5th of February, and that I took immediate steps to advise the Russian Government of the nature of his mission as well as to request such letters to the proper officials as might facilitate his expedition.

I addressed a note on the 5th of February to Mr. Yermoloff, imperial minister of agriculture and domains, in whose department the subject of the propagation and training of reindeer is best understood, and arranged by appointment for an interview with that minister which Lieutenant Bertholf had on the 8th of February.

I presented Lieutenant Bertholf also to Col. Vladimir Woularlarsky, the gentleman to whom the concession for mining has been granted by the Imperial Government throughout the whole territory of Alaska lying opposite Cape Nome, who is one of the persons in Russia best acquainted with the conditions of the country through which Lieutenant Bertholf's journey lies, as well as with the means and methods of transportation. Colonel Woularlarsky gave him much valuable information and introduced him to Mr. Bogdanovitch, the well-known Russian engineer, who has quite recently returned from the Pacific coast through Siberia, and knows the country well.

In further compliance with the expressed wishes of Lieutenant Bertholf, I addressed a note on the 9th of February to Count Lamsdorff, imperial minister for foreign affairs, requesting him to announce to the imperial officials in Siberia the coming of Lieutenant Bertholf, and to bespeak for him the necessary assistance in the furtherance of his journey. M. de Lamsdorff replied very courteously by a note from Prince Obolonsky, adjoint of the minister for foreign affairs, on the 19th of February, informing me that steps had been taken at once, with the result that the respective governors-general of the provinces of Irkutsk, of the district of the Amour, of Tobolsk, and of Tomsk have been invited to extend every requisite assistance to him.

I gave him also a note of introduction to the Russian Seal Skin Company in St. Petersburg, whose director-general, Mr. Alexis Protosoff, has informed me, as you will observe by the copy of his letter of the 26th of February, hereto attached, that the agents of that company at Ayan, Okhotsk, Ola, and Gishigha, on the Okhotsk Sea and the Anadyr district, have been instructed to give Lieutenant Bertholf assistance and to supply him with provisions when he may require them.

Thus equipped for his journey, Lieutenant Bertholf sets out under auspices which assure to him every advantage that a traveler can have in the remote districts of the Russian Empire which he intends to visit. He left St. Petersburg on Saturday, the 23d of February.

I beg leave to inclose to you, herewith copies of the entire correspondence which I have had upon this subject.

I have the honor to be, sir, your obedient servant,

CHARLEMAGNE TOWER.

EMBASSY OF THE UNITED STATES,
St. Petersburg, January 22 (February 5), 1901.

The undersigned, ambassador of the United States, presents his compliments to His Excellency Mr. Yermoloff, imperial minister of agriculture and domains, and has the honor to inform his excellency of the arrival at St. Petersburg of Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, who is proceeding, by order of the United States Government, to Siberia for the purpose of gathering information concerning the reindeer of the region in the neighborhood of the Sea of Okhotsk.

The ambassador of the United States begs to inquire whether it would be agreeable to his excellency to receive Lieutenant Bertholf, and, if so, request his excellency to appoint a day and hour when Lieutenant Bertholf may have the honor of calling upon him. The ambassador would consider as a favor any suggestions or facilities his excellency may have it in his power to extend to Lieutenant Bertholf in order to insure the success of his mission.

The ambassador avails himself of this occasion to renew to his excellency the assurances of his highest consideration.

CHARLEMAGNE TOWER.

His Excellency Mr. YERMOLOFF,
Imperial Minister of Agriculture and Domains, etc.

MINISTRE DE L'AGRICULTURE ET DES DOMAINES,
St. Petersburg, January 22 (February 5), 1901.

The undersigned, minister of agriculture and domains, presents his compliments to His Excellency Mr. Tower, ambassador of the United States, and has the honor to inform his excellency that he will be able to receive the Lieut. Ellsworth P. Bertholf, of the United States Revenue Service, on Friday, January 26, at 2 o'clock in the afternoon, and will be glad to put at his disposal all the information concerning the reindeer of the region in the neighborhood of the Sea of Okhotsk.

The minister of agriculture and domains avails himself of this occasion to renew to his excellency the assurance of his highest consideration.

P. YERMOLOFF.

To His Excellency Mr. TOWER,
Ambassador of the United States, etc.

EMBASSY OF THE UNITED STATES,
St. Petersburg, January 27 (February 9), 1901.

EXCELLENCY: I have the honor to inform your excellency that Lieut. Ellsworth P. Bertholf, of the Revenue-Cutter Service of the United States of America, has arrived in St. Petersburg, sent by the

Government of the United States on a special mission to collect information concerning reindeer, their propagation, and the methods adopted for their employment and care.

To make these investigations it will be necessary for him to go to those distant parts of Siberia which border the Okhotsk Sea, and since a great part of his journey will have to be made with reindeer and dogs it is extremely important that he start as soon as possible so as to be able to reach his destination while the snow is still on the ground.

Under these circumstances I beg leave to request your excellency to use your good offices in obtaining for Lieutenant Bertholf the necessary recognition on the part of the Imperial Government in order that the proper authorities of the localities where his studies will take him may assist him in his mission.

Should your excellency desire to see Lieutenant Bertholf personally on the subject of his journey it will give me great pleasure to present him to your excellency at a day and hour you would have the kindness to indicate. At the same time I would request you to inform me whether there are any other steps I may take to facilitate the carrying out of Lieutenant Bertholf's expedition.

I avail myself of this occasion to renew to your excellency the assurance of my highest consideration.

CHARLEMAGNE TOWER.

To His Excellency COUNT LAMSDORFF,
Imperial Minister for Foreign Affairs, etc.

MINISTRY FOR FOREIGN AFFAIRS,
FIRST DEPARTMENT,
February 6 (19), 1901.

Monsieur l'AMBASSADEUR:

Upon the receipt of your excellency's note of the 27th of January (February 9) last, the imperial ministry did not fail to immediately place itself in communication with the competent officials in order to request the authorities in Siberia to aid and assist Lieutenant Bertholf, sent by the United States Government to study, in Siberia, the reindeer, their propagation, as well as the methods adopted for their care and employment.

A communication received from the imperial ministry of the interior states that the governors-general of Irkutsk and of the region of the Amur have been invited to instruct the local Siberian authorities to extend every requisite assistance to the said American traveler.

Informing you of the foregoing, I avail myself of this occasion to renew to your excellency the assurance of my high consideration.

OBOLONSKY.

His Excellency CHARLEMAGNE TOWER,
Ambassador of the United States, etc.

EMBASSY OF THE UNITED STATES,
St. Petersburg, February 9 (22), 1901.

The ambassador of the United States of America has the honor of informing the Russian Fur Seal Company that Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, is in Russia on behalf of the Government of the United States, having been officially sent by his Government to proceed to the region in the neighborhood of the Sea of Okhotsk for the purpose of gathering information concerning the reindeer there, their propagation, care, and manner of training and use.

CHARLEMAGNE TOWER.

DIRECTOR GENERAL OF POSTS AND TELEGRAPHS
 OF THE RUSSIAN EMPIRE,
St. Petersburg, February 13 (26), 1901.

To His Excellency Mr. CHARLEMAGNE TOWER,
Ambassador of the United States at St. Petersburg.

The general director of posts and telegraphs of the Russian Empire presents his compliments to his excellency Mr. Charlemagne Tower, ambassador of the United States, and has the honor to inform him, in reply to his letter of the 12th (25th) of February, that he has requested, by telegraph, the governor-general of Irkutsk and of the province of the Amur to take the necessary measures to facilitate in every possible way the journey of Lieutenant Bertholf in Siberia, from Irkutsk to Gishigha on the Sea of Okhotsk.

[Translation of telegrams accompanying General Petroff's note.]

ST. PETERSBURG, *February 13 (26), 1901.*

To the GOVERNOR OF IRKUTSK.

Lieutenant Bertholf, sent on special mission by the Government of the United States of America to Gishigha, starts from Moscow to-morrow by way of Irkutsk, Yakutsk, Okhotsk. At the request of the American ambassador your excellency is requested to instruct the local authorities to extend their assistance for the uninterrupted journey of Bertholf as far as Okhotsk, delivering to him for this purpose an open letter of command.

LIEUTENANT-GENERAL PETROFF.

To the GOVERNOR-GENERAL OF KHABAROVK.

Lieutenant Bertholf, sent on special mission by the Government of the United States to Gishigha, leaves Moscow to-morrow, passing through Irkutsk, Yakutsk, Okhotsk. At the request of the American

ambassador your excellency is desired to invite the chief of police of Okhotsk to extend his assistance so as to insure Bertholf's journey to Gishigha.

LIEUTENANT-GENERAL PETROFF.

THE RUSSIAN SEAL-SKIN COMPANY,
St. Petersburg, February 13 (26), 1901.

His Excellency CHARLEMAGNE TOWER,
Ambassador of the United States of America, St. Petersburg.

YOUR EXCELLENCY: Lieut. Ellsworth P. Bertholf, of the United States Revenue-Cutter Service, called the other day at our office before proceeding to the northern region of the east Siberia for the purpose of gathering information concerning the reindeer there.

As he presented to us a document given to him by your excellency on the 9th (22d) February certifying that Lieut. E. P. Bertholf undertakes the trip on behalf of your Government, we were very pleased to give to this gentleman letters to our friends in Yakutsk and our agents and customers at different points at the coast of the Okhotsk Sea, viz: Ayan, Okhotsk, Ola, and Gijiga (the latter together with Anadyr region), instructing them to assist in any way Mr. Bertholf in their cooperation and good advices for a successful fulfillment of the commission he is charged with.

Besides, we have given to them the right of letting off goods and provisions out of our stores against Mr. Bertholf's receipts, which shall be accepted by us from them as cash, and which receipts Mr. Bertholf promised us to settle on his return to Washington.

Our agent at Petropavlovsk, where is our principal stock, shall also be instructed to provide and to send to Gijiga to Mr. Bertholf all provisions he may require in the matter. Acquainting you with the above, we are, your excellency's obedient servants,

THE RUSSIAN SEAL-SKIN COMPANY.
ALEXIS PROTOSOFF.

[Copy of telegram received.]

WASHINGTON, *February 19, 1901.*

TOWER, *Ambassador, St. Petersburg:*

Expedite if possible departure Lieutenant Bertholf; important to success his mission.

HILL, *Acting.*

[Copy of telegram sent.]

ST. PETERSBURG, *February 20, 1901.*HILL, *Acting, Department of State, Washington:*

I have completed official arrangements for Lieutenant Bertholf, who can start whenever he thinks best.

TOWER.

[Registered telegram.]

EMBASSY OF THE UNITED STATES,
St. Petersburg, February 27, 1901.

BERTHOLF, *Slaviansky Bazar, Moscow:*

Arrangements made for the facilitating your journey as requested by you. Governor Irkutsk will give you open letter commending all posts push you forward.

TOWER, *American Ambassador.*

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., March 22, 1901.

The SECRETARY OF THE INTERIOR.

SIR: I have the honor to acknowledge the receipt by reference from your office of the letter of the honorable the Secretary of State, dated March 14, 1901, inclosing a copy of a dispatch from the United States ambassador at St. Petersburg, reporting as to the action taken by him in regard to Lieutenant Bertholf's mission to Siberia, at the instance of this Bureau.

In reply, I beg to express my high appreciation of the courtesy of the Department of State and of the United States ambassador at St. Petersburg in this matter.

I have the honor to be, very respectfully, your obedient servant,
W. T. HARRIS, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
Okhotsk, Siberia, April 21, 1901.

COMMISSIONER OF EDUCATION,
Washington, D. C.

SIR: I have the honor to report my arrival at this place yesterday, the 20th instant, and that I leave here to-morrow, the 22d, for Ola, which is about half way between here and Gishega.

In obedience to your telegram, received February 22, instructing me to proceed by this route, I left St. Petersburg February 24, reach-

ing Moscow on the 25th. At St. Petersburg I engaged an interpreter, and we left Moscow for Irkutsk on the first train, February 27. We reached Irkutsk on the 8th of March. The governor-general at Irkutsk had been instructed by the St. Petersburg authorities to facilitate my passage as much as possible, and he detailed the chief of police to aid and advise me. Through the assistance of the chief of police I was enabled to make all preparations and leave Irkutsk March 13. In order that I might travel night and day it was necessary to purchase a covered sled, called a pavoska, and have the necessary repairs made. At Irkutsk I purchased the outfit necessary for myself and interpreter, such as fur clothes, arms, and provisions. The trip from Irkutsk to Yakutsk is made with post horses, the stations being some 25 or 30 versts apart, and the mail occupies usually twenty days making the trip, a distance of 2,704 versts. Being provided with a paper by the governor-general directing the different stations to furnish horses without delay, we traveled rapidly and reached Yakutsk on March 28. In some places the road was bad, and we suffered several accidents, so that at Vitien I was obliged to discard the pavoska purchased at Irkutsk and procure another, which lasted to Yakutsk.

From Yakutsk to Okhotsk is a post road, so-called, and, as the trip is made with horses, reindeer, and dogs, special sleds had to be procured at Yakutsk, which delayed us at that place some ten days, for, there being no ready-made sleds, they had to be made, and the Yakuti workmen are as slow as natives usually are. At Yakutsk I received the same consideration as at Irkutsk, the governor at Yakutsk having been notified of my coming. Everything was done to hasten matters, but I was unable to leave Yakutsk until April 6. The distance to this place is 1,131 versts, and by traveling night and day the trip can be made in eight days.

We made the first half of the distance in less than four days, but the weather turned bad, and a heavy snowstorm set in. For six days it blew hard, and a heavy snow fell almost incessantly, and the trail between the stations was completely effaced. The storm did not set in until after we had changed from horses to reindeer, and, as we were then traveling through the Tunguse country, I was able to procure extra deer from them to help break a road. Ordinarily, when the road was already made, we had four or five sleds, with two deer to each sled, and would make a distance of 60 versts in six hours. It will be appreciated how severe the storm was when I state that with thirty deer and ten sleds it took us three days to make 75 versts between two stations. Throughout the whole distance the snow was waist deep, and of course the drifts were much deeper. Two Tunguse would ride ahead, mounted on deer, leading three more deer. Then would come five empty sleds, each drawn by two deer, and then the loaded sleds followed. That would leave five extra deer to replace

the ones that gave out occasionally. The reindeer that belong to the post stations are small and of very little account, but the Tunguse deer are very large and strong, and easily carry a man for miles through deep snow. From Okhotsk to Aldan (which is near Yakutsk) is a caravan route, and quantities of tea are transported from here to Aldan in the winter, using the deer for the sleds. We passed ten or fifteen large caravans on the road, camped, awaiting the cessation of the storm. Of course after we came along and had broken a road all these caravans started again. One caravan we passed had forty sleds and one hundred deer, all of them large Tunguse deer.

Fortunately by the time we changed from reindeer to dogs (100 versts from Okhotsk) the storm had ceased and the caravans had broken a road for that distance. On account of this storm, which the governor here informs me is the most severe ever known, it took us fourteen days instead of eight to get from Yakutsk here. During the last five days we have traveled on many rivers, and it is so late in the season that they are already breaking up, and several times we were obliged to make detours to find a place to cross. In one instance we traveled 20 versts out of our way to find a crossing over the Okhotsk River, which was too deep for fording.

When I sent my telegram under date of February 20, stating that it was not possible to reach Gishega by the winter route, I did so upon information gathered from official sources in St. Petersburg, and since coming here I see no reason to change. It is warmer toward the northern part of the Okhotsk Sea than it is here, and here the snow is already melting rapidly, making traveling difficult in the daytime, and the rivers are breaking up. Many rivers have to be crossed between here and Gishega, and as the people here tell me it is impossible to get to Gishega, I do not deem it advisable to attempt it, for should I do so, and be stalled on the road, I could neither go ahead nor return, and then would have no means of getting to where I could fulfill the object of my trip here. Such a thing as a skin boat is almost unknown along this coast.

I have gathered information, however, that leads me to believe it unnecessary to get to Gishega at all. At Irkutsk I met a man who had been vice-governor of Yakutsk and who has traveled all through this region up to Gishega, and from there across the mountains to Verkue Kolimsk, on the river Kolima. He first told me that though it was possible to obtain deer in the Gishega region, they must be bartered for, as the Chuckchees and Kotyaks who inhabit that region do not know nor want money, and that the Chuckchee and Kotyak deer were all small. He said that the large deer belonged to the Tunguse, the central part of whose country is about Ola or Yomsk; that is, halfway between here and Gishega. That information I have had verified by everyone who should know. That the Tunguse deer are large and strong I know from my recent experience. At St. Petersburg I

obtained from the Russian Seal Skin Company letters to their agents at different places in this region, and while I was at Yakutsk the Okhotsk agent of the Seal Skin Company arrived from Okhotsk. This man, Mr. Bushuyef, has a store at Ola and Yarusk, and spends part of his time there. He corroborates the story of the ex-vice-governor of Yakutsk, and in addition informed me that I might have some trouble persuading the Tunguse to sell many deer, as this is something new; but that they, the Tunguse, understood the use of money, and did sell their deer for money, though not in such large numbers as I want. That in the neighborhood of Ola there were some rich Tunguse who had many thousands of deer, and that the deer were there and could be purchased. Mr. Bushuyef agreed to enter into a contract to furnish deer at 10 rubles a head, and have them ready for shipment at Ola at any time specified during the summer of 1902. He could not agree to have a certain number, but anywhere between 500 and 1,000, to continue each succeeding year. The governor here informs me that Mr. Bushuyef is a responsible party and can live up to his engagements. I am very hopeful of procuring some large deer this year at Ola, but the transportation of them to Alaska is the problem. The first steamer leaving Vladivostok in the spring goes first to Petropavlovsk, then to Gishega, and then here, stopping at Ola on the way.

It is now my intention to attempt to get as far as Ola, and there endeavor to purchase as many deer as I can and have sufficient funds for. If I can charter the first steamer that comes along I will do so, but if not, and by that time I have obtained a sufficient number of deer to warrant it, I will go to Vladivostok, charter a steamer there, and take the deer to St. Lawrence Island or Port Clarence. The distance from Ola to Alaska is some 2,000 miles, and a good steamer should do that in twelve or fifteen days at most. I have now explained how matters are now. Should I go to Vladivostok to charter a steamer I shall need more money. This letter will go to Yakutsk by the Cossack I brought with me, and should reach you between the middle and end of June. It would facilitate matters if you could arrange for me to draw funds at Vladivostok when I cable to you from that point.

Yours, very respectfully,

E. P. BERTHOLF,
*First Lieutenant, Revenue-Cutter Service,
 Acting Disbursing Officer, Interior Department.*

SAN FRANCISCO, CAL., *April 30, 1901.*

DR. SHELDON JACKSON,
General Agent of Education, Alaska.

MY DEAR SIR: Your letter of March 19 with inclosures duly received, and I am pleased to see that our friends in the Russian Seal Skin Company have given Lieut. Ellsworth P. Bertholf such a good

send off; likewise the Russian Government. With these documents the lieutenant will have no trouble in obtaining whatever he may require.

Regarding the payment for supplies which our friends may furnish I think as you do; it will be more convenient for your bureau to make them payable here. Our friends certainly will be satisfied with such an arrangement, as we have open accounts with them.

Our agent in Vladivostock is Messrs. Kunst & Albers. If you wish, the lieutenant can apply there for any funds. You can inform him so.

As regards Gishega, we do not know the agent there, but Mr. Fadejeff, the general agent, will arrive at Petropavlovsk about May 20, and I expect you will meet him there, so you can arrange all matters with him, as he is the man who has the whole power. You can show him our letter if necessary. I shall drop him a few lines also, to notify him regarding credits, etc.

I remain, yours, truly.

LEON BLUM,
From ROTH, BLUM & Co.,
201 California Street, San Francisco, Cal.

SEATTLE, WASH., *May 11, 1901.*

MR. LEON BLUM, *San Francisco, Cal.*

SIR: Yours of April 30 is received, and I am glad that we can arrange to pay Lieutenant Bertholf's bills in Siberia through your firm in San Francisco, and I will write the lieutenant to that effect. I will also write Messrs. Kunst & Albers at Vladivostock concerning the same thing. I regret to say that I will not call at Petropavlovsk, and consequently will not be able to meet Mr. Fadejeff, general agent of the Russian Seal Skin Company. The only place we will touch on the coast will probably be Baroness Korfa Bay.

Very respectfully, yours,

SHELDON JACKSON,
General Agent of Education in Alaska.

SEATTLE, WASH., *May 14, 1901.*

MESSRS. KUNST & ALBERS,

*Agents of Russian Seal Skin Company,
Vladivostock, Siberia.*

DEAR SIR: I inclose you a copy of a letter of Mr. Leon Blum concerning supplying Lieut. Ellsworth P. Bertholf with such money as he may need, and sending the bill to Mr. Blum in San Francisco for

presentation to the United States Government for payment. Lieutenant Bertholf has been sent by the United States Government to the region of Gishega for the procurement of reindeer. Any assistance that you can render through the agents of the Seal Skin Company in that section of the country will be duly appreciated.

Mr. Bertholf is armed with letters from the Government at St. Petersburg to the several governors and officials of Siberia, also with letters from the Russian Seal Skin Company, St. Petersburg, to their employees to give him such assistance as they can.

I take the liberty of communicating through you a letter to Lieutenant Bertholf. Kindly remail it to him at Gishega, unless he has sent you the name of some other place where it will be more convenient for him to receive the letter.

Thanking you in advance for your kindness and assistance to him, I remain, very truly, yours,

SHELDON JACKSON,
General Agent of Education in Alaska.

SEATTLE, WASH., *May 17, 1901.*

Lieut. ELLSWORTH P. BERTHOLF, R. C. S.

MY DEAR LIEUTENANT: I have been delaying writing to you until I knew something definite of the movement of the ships. After getting your letter from Europe, before leaving for Siberia, I brought the matter of placing more money to your account before the Commissioner, but there seems so many complications in the way, through rules of the Treasury Department, that nothing was done in that particular direction. The Commissioner of Education applied, through the Secretary of the Interior, to the Secretary of the Treasury, that your accounting every three months, as is the rule of the Treasury Department, could be suspended until you return to this country.

We also wrote Roth, Blum & Co., San Francisco agents of the Russian Seal Skin Company, with regard to your getting money as well as supplies from their agents in Siberia—a copy of which letter I inclose you. I have also written Messrs. Kunst & Albers, agents of the company at Vladivostock, inclosing to them a copy of Mr. Blum's letter, and soliciting their assistance. With their hearty cooperation I think that you can get what money you will need through them.

The *Bear* was ordered to sail April 25 from Seattle direct to Baroness Korfa Bay, in order to meet you, according to the agreement, May 15, but the repairs to the machinery not being done, the date of sailing was postponed to May 5, and later to May 10; but before May 10 arrived the machinists that were doing the work went on a strike, and it now looks as though the *Bear*, at Tacoma, and the *Thetis*, at San

Francisco, that were both being fitted for sea, might not be able to sail before July. Everything of course depends on the time when the strike will be adjusted in the indefinite future. At first it was supposed that the *Thetis* could be got off, and it was proposed to substitute the *Thetis* for the *Bear* on the trip to Baroness Korfa Bay, but the *Thetis* not being ready, probably neither of them will go for the present. When the strike is adjusted and we get ready to sail I will write you again concerning the situation.

I will send copies of this letter, one through Messrs. Kunst & Albers, another through the United States consul at Vladivostok, another by way of Petropavlovsk, and another direct to Gishega.

I wish you would write a few lines during the summer every time a ship comes within your reach to the Bureau of Education, so that we may know how you are progressing; also, later in the summer or fall, when your plans are fully matured for the winter of 1901-2, that you would write the Bureau of Education fully with regard to plans and wishes; what you propose in the way of transportation for 1902, whether the *Bear* or a chartered Japanese steamer; also what the prospects are as to the number and character of the deer; what your plans are for getting across from Gishega to Baroness Korfa Bay, and the approximate time when you wish a ship to meet you at Baroness Korfa Bay.

The cutter *Rush* will be stationed at Sitka, and is expected to take the court to Valdez, and possibly other places along the southeastern coast of Alaska. Lieutenant Coehran has been assigned to duty between Puget Sound and San Francisco.

Trusting that your health may continue firm, and that you may be successful in your enterprise, is the wish of your friend.

Very truly, yours,

SHELDON JACKSON,
General Agent of Education in Alaska.

SEATTLE, WASH., *June 1, 1901.*

Lieut. EDWARD P. BERTHOLF, R. C. S.,

Gishega, Kamchatka, Siberia.

MY DEAR LIEUTENANT: The strike is still on, with no prospect of immediate settlement. The *Bear*, with a portion of her machinery out, is tied up to a buoy at Tacoma. The *Grant* ran on a rock near Victoria, and will probably take all summer for repairs. She had started to take Mr. McCutcheon, fish inspector, around to the canneries. The *Rush* is to take the court at Sitka over to Valdez, and is to be stationed at Sitka for the balance of the season. The *Manning*, Captain Buehner in charge, is to take General Clark and his assistant to the Seal Islands, then she will return and get a load of supplies for

the revenue cutter on the Yukon. There is a rumor that the *McCulloch* is to be sent to the Philippines, and Lieutenant Cochran will be one of the officers to go. The laying-up of the *Bear* will prevent our getting over to Baroness Korfa Bay this summer. Be sure to send out in the summer or fall, addressed to me at Washington, D. C., not only a full account of what you find, but also of what your plans are for next winter. If you find that you can without fail secure a large number of deer, try to let us know, so that we can charter a Japanese steamer for their transportation.

I inclose you a copy of a letter previously sent you, as I am never sure that what I send you will reach you. If you get hold of any good photographs that will illustrate your report and journeys please forward them to me at Washington for the report.

Trusting that your health will remain good and your life be spared, and your work prosper,

I remain, very truly, yours,

SHELDON JACKSON,
General Agent of Education in Alaska.

DUTCH HARBOR, *June 20, 1901.*

I reached here on army transport *Warren*. The *Bear*, when I left Seattle June 8, was still tied up to buoy at Tacoma. The *Thetis* was at Mare Island, and would not be able to sail north from Seattle before July 15. The *Jeannie*, with Lieutenant Jarvis, has reached Nome. Went through 400 miles of ice going north and 600 returning south. The *Nome City* also reached Nome, but has so far been unable to come out. Four unsuccessful attempts have been made to reach the Seal Islands. They are still surrounded with ice. The steamer *Homer* and cutter *Manning* are making another attempt to reach the islands. When the *Jeannie* left the north the winter ice was still unbroken in Norton Sound. The United States Army transport *Warren* met ice June 17, 30 miles southeast of Seal Islands and returned here. It will be unusually late when steamers will reach Nome and St. Michael this year.

The Lord be with and bless and keep you. I remember you constantly in prayer.

Very truly, yours,

SHELDON JACKSON.

VLADIVOSTOCK, SIBERIA, *July 21, 1901.*

COMMISSIONER OF EDUCATION,

Washington, D. C.

SIR: Since my last letter, written at Okhotsk the latter part of April last, I have the honor to report my progress as follows:

I left Okhotsk, accompanied by my interpreter, on April 22, and

reached Ola on the morning of the 29th. I had procured strong letters from the nachalink at Okhotsk to the local authorities at Ola, directing them to aid me in every way. At Ola we were met as usual by the ispravnik and starosta. Having explained the nature of my business, and presented the nachalink's letters, we were informed that one of the wealthy deer men I was looking for had been in Ola the preceding day, and after a consultation it was decided that it would be better to send for the deer men, instead of my going to them. Accordingly messengers were dispatched for Mikhial Habarof and his nephew, Inakentia Habarof, the former having his herd of 5,000 deer some 60 versts, and the latter his herd of 3,000 some 100 versts, from Ola. The messengers left soon after my arrival. On the evening of the following day, the 30th, the two deer men arrived, and it required some two hours of talk and persuasion by the ispravnik and starosta, backed up by the nachalink's orders, to induce these two men (Tunguse) to part with a number of deer. We had taken up our quarters at the post station, and after the deer men had finally agreed to sell deer the ispravnik brought them to me. We arranged the price of the deer, and several questions concerning their delivery, when I found out they expected me to take the deer on my own hands right away, and be responsible for them until I could get a ship. The price agreed upon was 10 rubles a head; but taking the deer immediately was very unsatisfactory, as I would have to shoulder whatever happened during the fawning season, and subsequently until embarkation. At first they refused to sell the deer at all unless I took them right away, but after a lengthy conference we finally reached the following agreement: The two Tunguse were to separate from their two herds some 600 deer, and keep them in a distinct herd, and they were to deliver to me at least 500 deer in good condition on the 21st of July (Russian date), at a place to be selected by me. The 500 were to consist of 450 females, 1, 2, or 3 years old, and 50 bulls. On my part I agreed to pay them 11 rubles a head for all such deer delivered at the proper time (not less than 500), and 375 rubles for the service of six men to herd this separate herd until delivered. That would insure me at least 500 deer in good condition, and as many more as they would bring. But they would not sell more than that number this year. I intended to visit the deer herds of Mikhial and Inakentia, but on May 1 a heavy rain storm occurred, which made traveling almost impossible. I learned subsequently these two deer men were four days getting back, and then had to wade the river on their way. Consequently I did not get to see their herds. I have seen and inspected many of the smaller herds about Ola, and they are much larger than either the Chukehee or Koryak deer.

Having arranged for the purchase of the deer, it still remained to transport them. To facilitate the embarkation of the deer, I had built

on the end of a small narrow peninsula projecting into the Ola Bay a large corral, together with a small one, in which to hobble the deer. After the hills were well clear of snow I sent the village people of Ola out to gather moss for the deer to eat while on board ship. The moss had to be brought some 5 versts in bags, carried on the men's backs, and I was obliged to pay 20 kopecks a bag, or about 10 cents. The corral, the moss, and other expenses, such as bags, etc., will bring the price of the deer up to about 13 rubles a head.

On the 3d of July the first steamer arrived at Ola, bound for Vladivostok. I left my interpreter at Ola to care for matters at that end and took passage on the steamer myself, reaching this place July 16. I immediately cabled to you giving a skeleton of progress, and asking you to have Roth, Blum & Co., of San Francisco, cable their agents here to allow me to draw on them, and am now awaiting their reply. Steamers are very scarce just now, and I find there is but one available, a Russian steamer, called the *Progress*. Fortunately I have seen her, and she is just what is needed. But the scarcity of ships makes charters high, and it will cost in the neighborhood of \$10,000 to transport these deer to Alaska. I have had to close with the owners of this vessel in order to get her. I thought of going to Japan for a steamer, but it requires two and a half days to get there, and should I find no steamer the *Progress* would not be available when I returned. In case I do not hear from you by the time my preparations are made, I shall draw on the reindeer fund a sight draft, which I trust will be honored in due time. I can not now reach Port Clarence before August 25, about, and I hesitate to delay here, as in September the weather in Alaska begins to get bad. I also cabled for your sanction in making a contract for reindeer to be delivered next year. In case I fail to get your reply I shall make the contract. There is another wealthy Tunguse deer man in the region of Ola, but whom I could not reach while there. He is expected to be in Ola when I return, and I have great hopes of being able to contract for some 1,500 deer with these three deer men for next year. My expenses this year, together with the expense of the ship making one trip to Alaska for only 500 deer, will bring the total cost of these deer up to some \$30 a head. If, however, I can contract for 1,500 deer, they can be delivered in Alaska for \$20 a head next year, which would make the total cost of the deer for the two years less than \$25.

As I was unable to get to the large deer herds 100 versts from Ola, owing to the rainfall and the very early spring, of course I could not get to Gishega, even had I so desired. While I find it is extremely difficult to ascertain facts in Siberia unless you go to the spot and see for yourself, I have made endless inquiries from all sources concerning the Gishega region, and, striking a general average, I am prepared at this writing to state:

1. I can not purchase deer around Gishega with money. The deer there must be bartered for, and there is not usually a sufficient quantity of trade goods in the Gishega stores to buy 1,000 deer.

2. There are many large herds of deer on the peninsula between Gishega Gulf and Penjinsk Gulf—called Tigre Nos deer. These deer are small, like the Koryak deer in the region of Baron Korfa Bay, and not to be compared to the Tunguse deer. If such deer were wanted they could be purchased as well in the Baron Korfa district. There is a trading station at Baron Korfa Bay, but with a small amount of trade goods.

3. It is said there are Tunguse deer in the vicinity of Ola, but I have been unable to form any intelligent idea as to whether they are numerous or otherwise.

4. It is claimed by everybody who should know that it would be impossible to get natives to drive deer from Gishega to Baron Korfa. Not having been at Gishega, I am not prepared to give my opinion.

5. Deer can not be embarked at Gishega save at enormous cost, as the vessel must anchor some 10 miles from the shore on account of shoal water, and you can only load at high water, there being but one tide a day at that place.

6. There are many Chukchee deer in the Gishega region, but whether they are available or not I can not at present say. They must be purchased by barter, and whether a sufficient number can be obtained by that means I am unable to say.

I am unwilling, from my experience in Siberia, to form any opinion unless I have myself been on the spot.

Ola is 2,000 miles from Port Clarence, representing a ten days' trip with good weather. Transporting the deer such a distance—I mean the young deer—I look upon as more or less an experiment. When I have landed these deer that I have purchased at Port Clarence, I will be prepared to give a definite opinion as to the advisability of procuring deer from Ola and in negotiating further in the Gishega region. For that reason I particularly hope to be able to catch Dr. Jackson before he leaves the Port Clarence region.

I have received your letter under date of June 6, and also Dr. Jackson's letter telling me about his arrangements with Roth, Blum & Co., and inclosing a copy of Roth, Blum & Co.'s letter to him. But I could not obtain funds on that letter, and Roth, Blum & Co. have not instructed Kuntz & Albers here to permit me to draw. Hence my lengthy cable to you. It is now the 21st, three days since I cabled you. In case no reply comes by to-morrow I shall cable Roth, Blum & Co., for while I would not hesitate in case of need to draw on the Department for the price of the steamer, I need money to pay for the deer, and I hesitate to draw on the Department for cash received by me.

I inclose several photographs giving you some idea of the Tunguse deer. One shows that the deer will carry me on its back, and I weigh some 200 pounds, and I feel quite certain that while I was riding about on this deer's back he felt much more comfortable than I did. The photograph, I think, shows it.

I have the honor to be, very respectfully,

E. P. BERTHOLF,
*First Lieutenant, Revenue-Cutter Service,
Special Disbursing Officer, Interior Department.*

[Cablegram.]

VLADIVOSTOK, *July 19, 1901.*

COMMISSIONER OF EDUCATION,
Washington, D. C.:

Arrived from Ola. Have purchased 500 deer, at 13 rubles, with prospect of 600. Paid parties. Deer now awaiting shipment. Will charter steamer, proceed to Port Clarence, arriving latter part of August. Telegraph Roth, Blum & Co., San Francisco, to cable agents here, Kunst & Albers, furnish me \$15,000. Request immediate action. Delay will prevent shipment this year. Your letter received. Important to consult Jackson in Alaska. Send word of my coming. Can contract 1,000 deer delivered next summer. Your consent necessary. Reply care consul.

BERTHOLF.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., July 23, 1901.

THE SECRETARY OF THE INTERIOR.

SIR: I have the honor to inclose herewith a copy of a cablegram from Lieut. E. P. Bertholf, Vladivostok, Siberia, in which he requests to be furnished with additional funds for the successful accomplishment of his mission to obtain reindeer from Siberia for Alaska.

In December, 1900, Lieutenant Bertholf, Revenue-Cutter Service, was detailed for service under this Department in connection with the reindeer enterprise; he was designated a special disbursing officer and at once proceeded to Siberia via St. Petersburg and Moscow. During February, March, and April he made an arduous journey across northern Siberia, and has now arrived at Vladivostok with between 500 and 600 reindeer.

He now requests that \$15,000 be placed to his credit in order that he may secure the transportation of these deer from Vladivostok to Port Clarence, Alaska. Twelve thousand dollars is the maximum

amount which the condition of the reindeer fund will permit to be set aside for the purpose mentioned.

I have the honor to request that in view of the exigencies of the case and in order that Lieutenant Bertholf's mission may reach a successful conclusion, that I may be authorized to cable to him through Messrs. Roth, Blum & Co., of San Francisco (who have expressed their willingness to advance funds to Lieutenant Bertholf), the sum of \$12,000, to be reserved from the reindeer fund for Alaska, 1902.

I also respectfully request instructions regarding permission for Lieutenant Bertholf to contract for deer to be delivered in the summer of 1902.

Very respectfully, your obedient servant,

LOVICK PIERCE,

Acting Commissioner.

DEPARTMENT OF THE INTERIOR,

Washington, July 23, 1901.

THE COMMISSIONER OF EDUCATION.

SIR: In compliance with the recommendation contained in your letter of the 23d instant, you are hereby authorized to set aside \$12,000 of the appropriation of \$25,000 for reindeer for Alaska, contained in the sundry civil act approved March 3, 1901, to be expended under the direction of Lieut. E. P. Bertholf in the purchase and transportation of reindeer from Siberia to Alaska.

In regard to your request for instructions relative to Lieutenant Bertholf contracting for reindeer to be delivered in the summer of 1902, I have to advise you that there are no objections to the same, providing that the amount of their purchase is paid from the above allotment.

Very respectfully,

E. A. HITCHCOCK, *Secretary.*

[Telegram.]

SAN FRANCISCO, CAL., *July 22, 1901.*

WILLIAM HAMILTON,

Assistant General Agent of Education for Alaska,

Bureau of Education, Washington, D. C.:

Referring to letter March 19, Vladivostok agents cabled us as follows: "Shall we pay for your account Bertholf \$15,000 on behalf Sheldon Jackson reindeer." Please advise us of your instructions in this matter; also inform us as to how we shall proceed in making collection from the Government for these advances. My charges will be 2½ per cent commission, with interest at 6 per cent.

LEON BLUM.

[Telegram.]

WASHINGTON, D. C. *July 23, 1901.*

LEON BLUM,

California Street, San Francisco:

Terms accepted. Furnish Bertholf \$12,000. Guaranteed by this Bureau. Letter follows.

LOVICK PIERCE,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., July 24, 1901.

Mr. LEON BLUM,

California Street, San Francisco, Cal.

DEAR SIR: Replying to your telegram of July 22 to Mr. Hamilton, I requested you yesterday to furnish Lieutenant Bertholf as much as \$12,000, which is guaranteed to you by this Bureau, together with your charges of $2\frac{1}{2}$ per cent commission with interest at 6 per cent, the terms specified in your telegram.

Upon the return of Dr. Sheldon Jackson and Lieutenant Bertholf to Washington, probably in September, the matter will be adjusted and payment made to you by vouchers on the appropriation "Reindeer for Alaska."

It is possible that Lieutenant Bertholf may not use the entire amount placed at his disposal.

The Bureau recognizes your courtesy in this transaction.

Very respectfully, yours,

LOVICK PIERCE,
Acting Commissioner.

[Cablegram.]

WASHINGTON, D. C., *July 23, 1901.*

BERTHOLF,

Care United States Consul, Vladivostok, Siberia:

Twelve thousand dollars authorized. Maximum appropriation permits. No contract for 1902 possible prior to appropriation by Congress. Can you make provisional arrangement? Jackson informed.

LOVICK PIERCE,
Acting Commissioner.

[Telegram.]

WASHINGTON, D. C., *July 23, 1901.*

SHELDON JACKSON,

Care Commanding Officer, Nome, Alaska,

Per U. S. Army Transport Egbert:

Bertholf brings 500 deer, Port Clarence, August. Important consult him.

LOVICK PIERCE,
Acting Commissioner.

[Telegram.]

JULY, 25, 1901.

SEATTLE HARDWARE COMPANY,

Seattle, Wash.:

Kindly forward Sheldon Jackson, care commanding officer, St. Michael, message "Bertholf brings 500 deer, Teller, August. Important consult." Please repeat same message, care Mrs. Gwin, Unalaska.

LOVICK PIERCE,
Acting Commissioner.

[Copy of telegram received by S. Foster & Co., from Lieut. E. P. Bertholf, Vladivostok.]

JULY 26, 1901.

Send this Jarvis quick. Will arrive Port Clarence 1st September. Reindeer. Important. Jackson wait arrival.

HURRICANE, N. Y., *July 23, 1901.*

LOVICK PIERCE, Esq.,

Acting Commissioner Education.

MY DEAR SIR: The telegram came yesterday, and I replied by telegraph. "If you are sure it can be spared, telegraph Roth & Blum, in San Francisco, to cable agent at Vladivostok to furnish the \$12,000, but that you should consult the miscellaneous division of the Interior Department, ascertaining through them the opinion of the Secretary."

Cable message is obscure on account of misspelling. I restore it as follows:

"Arrived from Ola. Have purchased 500 deer at 13 rubles, with prospect of 600. Paid parties. Deer now awaiting shipment. Will charter steamer and proceed to Port Clarence, arriving latter part of August. Telegraph Roth & Blum, San Francisco, to cable agent here, Kunst Albers, to furnish me \$15,000. I request immediate action. Delay will prevent shipment this year. Your letter received. Important to consult Jackson, in Alaska, and send word of my coming. Can contract for 1,000 deer to be delivered next summer. But your consent is necessary. Reply, care of consul at this place." (Signed) Bertholf.

It will be necessary to write Roth, Blum & Co., of San Francisco, at once, giving them a copy of the telegram as received by you and a copy of my revision, or your revision if you have a better one. They will know whether the Kunst Albers is the name of their agent at Vladivostok.

It is a great piece of good fortune for our bold enterprise—almost an embarrassment of riches. And if we can get the deer through to

Alaska the present summer it will save us at least \$5,000 in money, besides a year's time in the introduction of this larger breed of reindeer into Alaska. The Siberian deer which we have obtained are one-half as large again as the Lapland reindeer. These Tungoose reindeer seem to be more than half as large again as the Siberian reindeer that we have been getting.

It is all important, therefore, to have Lieutenant Bertholf reach Alaska with his reindeer the present summer, and I think that it is best to lay the matter before the Secretary with the hope that he will authorize us to send the remaining \$3,000 needed to make up the \$15,000, out of our present funds, although we may risk running short \$300 sometime next winter or spring. But I think that Jackson, if notified in time, can save the \$3,000 from the barter goods which he took with him to meet opportunities to purchase reindeer in Siberia. And Jackson, too, may get money from the Laplander who desired to purchase \$20,000 worth of reindeer, turning him over 100 of these deer at \$3,000, and having him pay the salaries of our employees at the reindeer stations, depositing the money for the purpose with a responsible party in St. Michael.

It is very desirable that Bertholf shall get the refusal of 1,000 deer next year, arrangements to be completed for the same next winter in case the appropriation committees in Congress will agree to it. These 1,000 deer at present rates will cost 13,000 rubles, say \$8,000, delivered at Vladivostok, and the transportation would cost about \$20,000 more, perhaps only \$18,000.

Of course, we can not legally contract for 1,000 reindeer now, because Congress has not made appropriation for the same. But I told the chairman (Mr. Cannon) that if successful with our purchases in the region of the Kamchatka Peninsula and the Sea of Okhotsk that we should be able to get all the reindeer we cared for in three years. One thousand received next year would very nearly make us independent of Asia for a supply of reindeer.

Please inform Dr. Jackson of the contents of Bertholf's telegram and tell him of the sending of the money. I think it will be well to have three copies made of the letter, one to St. Michael and others to points where he is likely to be. You can use your judgment as to a telegram to Seattle to be forwarded to the merchants there who know Jackson.

Please hand a copy of this letter to the honorable the Secretary of the Interior and furnish him all the additional information he may ask. I will write further suggestions if any occur to me to-morrow.

Truly, yours,

W. T. HARRIS,
Commissioner of Education.

[Cablegram.]

VLADIVOSTOK, *July 27, 1901.*COMMISSIONER OF EDUCATION, *Washington:*

Must have \$3,000 more, otherwise ship charter fails. Penalty incurred, money paid reindeer forfeited. Answer cable via Hongkong.

BERTHOLF.

BUREAU OF EDUCATION,
Washington, D. C., July 27, 1901.

The SECRETARY OF THE INTERIOR.

SIR: I have the honor to transmit herewith a copy of a cablegram from Lieutenant Bertholf, July 27, in which he states that in order to avoid the forfeiture of his reindeer and the penalty attached to the charter of his steamer the additional sum of \$3,000 (to complete the \$15,000 originally requested by him) is absolutely necessary.

This additional sum is strongly recommended by the Commissioner of Education in his letter of July 23 herewith.

Presuming that the income from license fees from Alaska will be as much as the Treasury Department estimates indicate, it will be possible to classify as industrial teachers certain employees now at the reindeer stations and pay their salaries from the educational fund, thus relieving the reindeer fund to the extent of \$3,000, the additional amount required by Lieutenant Bertholf.

I respectfully request authority to forward to Lieutenant Bertholf through Leon Blum, San Francisco, this additional sum of \$3,000, reserving same from reindeer fund 1902.

Very respectfully, your obedient servant,

LOVICK PIERCE,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,
Washington, July 27, 1901.

The COMMISSIONER OF EDUCATION.

SIR: In compliance with the recommendation contained in your letter of even date, you are hereby authorized to set aside the further sum of \$3,000 of the appropriation of \$25,000 for reindeer for Alaska, contained in the sundry civil act approved March 3, 1901, to be expended under the direction of Lieut. E. P. Bertholf in the purchase and transportation of reindeer from Siberia to Alaska.

The above sum is in addition to the \$12,000 authorized to be set aside for a similar purpose under date of the 23d instant.

Very respectfully,

E. A. HITCHCOCK, *Secretary.*

[Cablegram.]

WASHINGTON, *July 27, 1901.*

BERTHOLF. Care United States Consul,

Vladivostok, Siberia, via Hongkong.

Total \$15,000 authorized.

LOVICK PIERCE,
Acting Commissioner.

[Telegram.]

JULY 27, 1901.

LEON BLUM,

California Street, San Francisco:

Furnish Bertholf \$3,000 more. Total, \$15,000. Guaranteed by this Bureau.

LOVICK PIERCE,
Acting Commissioner.

ROTH, BLUM & Co.,
SHIPPING AND COMMISSION MERCHANTS,
San Francisco, July 29, 1901.

MR. LOVICK PIERCE,

Acting Commissioner of Education, Washington, D. C.

DEAR SIR: On the 22d instant I wired to the Bureau of Education as per inclosed copy and received your reply, and as instructed I wired to Vladivostok. I also received your telegram of the 27th instant to furnish Lieutenant Bertholf \$3,000 more, and I again wired to advance him the said amount.

Your favor of the 24th duly received, and I thank you for its contents. I noted that the matter will be adjusted on the appropriation of reindeer for Alaska and that Dr. Sheldon Jackson and Lieutenant Bertholf are expected to arrive in Washington in September, all of which is satisfactory.

I am very pleased to know that the Bureau recognizes my courtesy in this transaction.

Very respectfully, yours,

LEON BLUM.

OFFICIAL PAPERS RELATING TO THE RELIEF OF UNITED STATES SOLDIERS.

FORT ST. MICHAEL, ALASKA, *November 23, 1900.*

DR. FRANCIS H. GAMBELL,

Superintendent Eaton Reindeer Station, Unalaklik, Alaska.

SIR: I am instructed by the department commander to advise you that the War Department has at present between Unalaklik and Kaltag on the Yukon River three construction parties aggregating about 110 officers and enlisted men engaged in the work of building a Government telegraph between the points named. Recent reports received from these parties indicate that they are having great difficulty in advancing the line owing to the exceptional weather conditions for this season, with heavy snow followed by thawing and rain, and that the work may have to be suspended temporarily for this reason and on account of the ration supply being limited.

It is understood that there are a number of sled deer at your station with Lapp drivers, and the commanding general, therefore, requests that, if consistent with your instructions and duties under the Interior Department, you will furnish such animals and drivers as you may be able to spare from the herd to use in transporting supplies from Unalaklik to these parties, also from St. Michael to Unalaklik and otherwise aiding the work of construction in accordance with the detailed outline of work which will be submitted to you by the signal officer of this department.

Lieut. R. S. Offley, Seventh Infantry, has been directed to assume command of all these parties named and will be directed, in case the aid herein requested can be furnished by you, to consult with you upon your return to Unalaklik and inform you just what hauling for his command is most essential and will be of greatest benefit in advancing the work he has in hand.

An early reply is requested.

Very respectfully,

W. P. RICHARDSON,
Captain, Eighth Infantry,
Acting Assistant Adjutant-General.

EATON, ALASKA, *December 2, 1900.*

Dr. F. H. GAMBELL,

Superintendent United States Reindeer Station.

SIR: In compliance with instructions from the department commander, under date of 23d ultimo, I have the honor to request that you shall furnish as many deer teams as can be spared, to proceed to a point 18 miles west of Kaltag, there to assist in bringing the telegraph construction detachments under my command to a camp I have established near Old Womans Mountain.

The snow is so deep that I find it almost impossible to get them through with mule teams.

Thanking you in advance for any assistance, I remain,

Very respectfully,

R. S. OFFLEY,

*Lieutenant of Infantry, Commanding.*NULATO, ALASKA, *December 6, 1901.*

Dr. F. H. GAMBELL,

Eaton, Alaska.

DEAR DOCTOR: I called on Father Jetti and made mention that Lieutenant Offley had sent over to endeavor to employ the deer to take him over the portage, but that I did not see how you would be able to come very far out on the portage with them on account of the depth of snow and it being crusted so hard. It seems to me it would be impossible for them to get feed, as the detachment going in have to take shovels and shovel out a trail before they can lead the mules along. I think they will have to kill their mules as they leave a trail of blood from the mules' legs, even after shoveling a trail.

There is very good traveling on the Yukon this year. The warm spell brought so much water on the river it consumed all the snow, and turning cold suddenly, of course, put it in fine condition. I leave to-morrow for Tanana. With kind regards and wishing you a merry Christmas, I am,

Yours, truly,

N. V. HENDRICKS.

UNALAKLIK, ALASKA, *January 8, 1901.*

Dr. FRANCIS H. GAMBELL,

*Superintendent United States Reindeer Station,**Eaton, Alaska.*

SIR: Lieutenant Grimm informs me you are about to send a deer train to St. Michael for supplies, and that you will take additional teams if there will be freight, on account of the army to come here on your return trip. I will have about six bags of brackets, weight about

90 pounds each, and two 100-pound kegs of spikes; also, I will ask department headquarters to pack and have ready about 1,500 pounds of rations for shipment, and will be glad if you can bring any part of them. The matter of payment for transportation will be arranged by the chief quartermaster at St. Michael.

I am, very respectfully,

FRANK GREENE,
Major, U. S. A., Signal Officer, Department of Alaska.

UNALAKLIK, ALASKA, *January 8, 1901.*

Dr. F. H. GAMBELL,

Superintendent United States Reindeer Stations.

SIR: I have the honor to inform you that Maj. F. Greene, Signal Corps, United States Army, will have merchandise at St. Michael for Unalaklik and that all the sleds you take in addition to what you yourself need will be loaded.

I am, sir, very respectfully,

OTTO B. GRIMM,
Second Lieutenant, Signal Corps.

FORT ST. MICHAEL, ALASKA, *May 10, 1901*

Dr. FRANCIS H. GAMBELL,

Superintendent United States Reindeer Station,

Eaton, Alaska.

SIR: In reply to your communication of the 1st instant, I take pleasure in acknowledging the assistance rendered by you last December in bringing the detachments of Lieutenants Smith and Grimm through the deep snow to Old Womans Mountain.

Without such assistance, much, if not all Government property, would have had to be abandoned, and probably lost.

Thanking you, also, for personal favors, I remain,

Very respectfully,

R. S. OFFLEY,
Captain, United States Infantry.

APPLICATIONS FOR TRANSPORTATION WITH REINDEER.

OFFICE OF SPECIAL AGENT, TREASURY DEPARTMENT,

Nome, Alaska, November 5, 1900.

Dr. F. H. GAMBELL,

Superintendent Reindeer Station, Eaton, Alaska.

My DEAR DOCTOR: This will be handed you by Mr. O. H. Lovell, who is a member of the party of United States Commissioner Griggs,

who has been appointed by the judge of the United States district court to go to the new district of the Kuskokwim. Commissioner Griggs has to take with him his entire outfit and people to last him over the winter and into the spring, and on account of the difficult and long journey would like to have some reindeer to do the packing for him. Mr. Lovell will go ahead, as I said, and get the outfit ready, and if you can, let him have the necessary reindeer and see the commissioner through. I know it will meet with the approval of the Department and Dr. Jackson. Commissioner Griggs will follow later in the season. I have unexpectedly decided to go out, or I should hope to get over to see you soon myself. There are still two vessels out here, and I hope to be able to make one of them. With kind regards and best wishes,

I am, very truly, yours,

D. H. JARVIS.

DEPARTMENT OF JUSTICE, U. S. DISTRICT COURT,

DISTRICT OF ALASKA, SECOND DIVISION.

Nome, Alaska, August 17, 1901.

Lieutenant JARVIS,

Port Captain, Nome, Alaska.

DEAR SIR: The communication from Lute C. Pease, United States commissioner, Mount Kelly District with headquarters at Point Hope, addressed to Hon. Arthur H. Noyes, has been turned over to me. The communication in effect requests that arrangements be made if possible to secure the use of reindeer at Government stations at Point Hope and Cape Blossom on behalf of the commissioner in case of necessity, and suggesting that a communication be sent to you in relation thereto.

Mr. Pease has recently started for his headquarters, and expects to remain over the winter, and if it is not inconsistent with the rules governing your reindeer stations, or with your instructions in relation thereto, I hope you will grant Mr. Pease's request.

Yours, truly,

H. G. STEEL, *Clerk.*

PERMISSION TO PROCURE MILITARY SUPPLIES AT ST.
MICHAEL.

WAR DEPARTMENT,
Washington, April 20, 1901.

The SECRETARY OF THE INTERIOR.

SIR: I have the honor to acknowledge the receipt of your letter of the 3d instant inclosing and commending to favorable consideration copy of a communication from the Commissioner of Education, requesting that the proper officer of the medical department at Fort St. Michael, Alaska, be directed to furnish the superintendent of the reindeer station at Eaton, Alaska, with a limited amount of medicines for the use of the natives in the vicinity of his station.

Replying thereto, I beg to inform you that I have this day approved the recommendation of the Surgeon-General of the Army that in emergencies the surgeon at Fort St. Michael, Alaska, be authorized and directed to furnish a limited supply of necessary medicines to the superintendent of the reindeer station at Eaton, Alaska, as requested.

Very respectfully,

WM. CARY SANGER,
Assistant Secretary of War.

WAR DEPARTMENT,
Washington, April 20, 1901.

The SECRETARY OF THE INTERIOR.

SIR: I have the honor to acknowledge the receipt of your letter of the 3d instant, inclosing and commending to favorable consideration copy of a communication from the Commissioner of Education, who requests that the superintendent of the reindeer station near St. Michael, Alaska, be permitted to purchase from the commissary and quartermaster's departments such supplies as he may need for the use of the station.

In response thereto I beg to inform you that I have this day returned the papers to the bureaus above referred to, indorsed as follows:

In view of the remote location of this Government post and the fact that the extension of this privilege is in the interests of the public service, authority is hereby granted for the sale in limited quantities, for cash, under usual regulations, of such quartermaster's and subsistence stores as in the judgment of the commanding general, Department of Alaska, can be spared without detriment to military interests.

Very respectfully,

WM. CARY SANGER,
Assistant Secretary of War.

WAR DEPARTMENT,
Washington, May 4, 1901.

The SECRETARY OF THE INTERIOR.

SIR: As supplemental to Department letter of 20th ultimo, informing you that in response to the request contained in your letter of 3d ultimo, made at the instance of the Commissioner of Education, authority had been granted for the sale to the superintendent of the reindeer station near St. Michael, Alaska, in limited quantities, under usual regulations, such quartermaster and subsistence stores as in the judgment of the commanding general Department of Alaska can be spared without detriment to the military interests, I beg to inform you that the said bureaus now report that as the cost of transportation of stores to St. Michael is greatly in excess of that to posts within the States, owing largely to cost of lighterage, the rate to be charged on account of cost of transportation will have to be fixed at 50 per cent of the first cost of the articles.

Very respectfully,

WM. CARY SANGER,
Assistant Secretary of War.

GENERAL AGENT OF EDUCATION DIRECTED TO VISIT THE
SCHOOLS AND REINDEER STATIONS IN ALASKA.

BUREAU OF EDUCATION,
Washington, D. C., April 27, 1901.

Dr. SHELDON JACKSON,

General Agent of Education for Alaska, Washington, D. C.

SIR: Having received from the Secretary of the Treasury a favorable response to my request that you be permitted to travel upon the revenue cutters in Alaskan waters, in discharge of your official duties of inspecting the schools and reindeer stations, you will make your arrangements to join and sail northward on the revenue cutter *Bear*.

You are authorized and instructed on your journey across the continent to stop off at such points where you may have business in the interests of your work to transact.

Very truly yours,

W. T. HARRIS, *Commissioner.*

PAPERS RELATING TO THE TRANSPORTATION OF THE GENERAL
AGENT IN ALASKA.

WAR DEPARTMENT,
QUARTERMASTER-GENERAL'S OFFICE,
Washington, D. C., April 29, 1901.

Maj. G. S. BINGHAM,

Chief Quartermaster, St. Michael, Alaska.

MY DEAR MAJOR BINGHAM: This will be handed to you by my friend, Dr. Sheldon Jackson, who is in charge of the reindeer and educational work in Alaska.

It may be possible that Dr. Jackson will want to return to Seattle on one of our transports. If so, please see that he gets good accommodations on one of the ships. Anything else you can do for him will be greatly appreciated by Dr. Jackson as well as myself.

Very sincerely,

CHAS. BIRD, *Brigadier-General, U. S. V.,*
Deputy Quartermaster-General, U. S. A.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, May 3, 1901.

Capt. FRANCIS TUTTLE,
Commanding U. S. S. Bear, Seattle, Wash.

SIR: Referring to instructions of even date, you are further instructed as follows:

1. You are informed that Dr. Sheldon Jackson, of the Bureau of Education, Department of the Interior, will accompany you this year as usual, and you will afford him such facilities as may be in your power, in the prosecution of his labors, that will not interfere with the regular duties of your command.

2. Being in readiness for sea, you will sail for Baroness Korf Bay, Siberia, timing your movements so that the *Bear* may arrive there on as early a date as practicable.

3. It is expected that you will meet Lieut. E. P. Bertholf, Revenue-Cutter Service, at the point indicated, and you will receive on board the *Bear*, from that officer, such number of reindeer as you can safely carry, and transport them to a point on the Alaskan coast or island adjacent thereto, as may be determined by yourself and Dr. Jackson, after conference. Should Lieutenant Bertholf not have arrived at Baroness Korf Bay when you reach there, you will prolong your stay as you may deem proper in view of reaching destination with reindeer.

4. Having made the cruise outlined above, it is probable that your fuel supply will be so far exhausted as to require you to return to Dutch Harbor to replenish it. In this case, or whenever you are in need of fuel to replace that used from Dutch Harbor (if you touch there) to Siberia, from there to the point where reindeer are landed, and thence to Dutch Harbor to recoal, you will apply to Dr. Jackson and receive from him the fuel required, leaving payment therefor to be arranged by him.

* * * * *

Respectfully,

O. L. SPAULDING,
Assistant Secretary.

[Telegram.]

SEATTLE, *May 31, 1901.*

COMMISSIONER OF EDUCATION,
Washington, D. C.:

Ask Secretary War, through Secretary Interior, telegraph quartermaster, Seattle, admit Jackson and Cheever on transport *Warren* to St. Michael. Telegraph reply.

SHELDON JACKSON, *Agent.*

[Telegram.]

WASHINGTON, D. C., *May 28, 1901.*SHELDON JACKSON, *Seattle, Wash.:*

Major Ruhlen directed to furnish yourself and clerk transportation on *Warren* from Seattle to St. Michael.

BIRD,
Brigadier-General Volunteers.

TREASURY DEPARTMENT,

OFFICE OF THE SECRETARY,

Washington, June 7, 1901.

Dr. SHELDON JACKSON,

General Agent of Education in Alaska, Seattle, Wash.

MY DEAR SIR: Your letter of the 21st ultimo has been here some days, and I have been hoping (against hope, I fear) that strike would let up and the *Bear* got ready for the originally planned trip. Things have turned out very unfortunately, and it now appears that unless the *Bear* can be got off by the last of this month the Siberian trip will have to be abandoned. Even then her trip will have to be made expeditiously, or time for the northern (Barrow) cruise will not be left.

The *Thetis* will be crowded with Government officials bound to St. Michael and Nome, but I can see no reason why she can not take you to the points named in your letter, and Cushing will be instructed accordingly. Telegraphic instructions will be wired Tuttle at once to go to Bremerton to have remaining work on machinery completed. As last reports from him showed fifteen days' work yet to be done it may, and I hope will, be that she can yet be gotten off in time to carry out original orders.

I will do the best possible in all these matters, and will write Cushing to-day to receive you and assistant, provided the *Bear* can not go.

With best wishes, very truly, yours,

C. F. SHOEMAKER,
Captain, Revenue-Cutter Service, Chief of Division.

HEADQUARTERS DEPARTMENT OF ALASKA,

OFFICE OF CHIEF QUARTERMASTER,

Fort St. Michael, Alaska, July 7, 1901.

Dr. SHELDON JACKSON,

Unalaklik, Alaska.

SIR: Failing to secure transportation from the commercial companies for the stores that this office is required to ship to Golsovia and Unalaklik, I have been obliged, as a last resort, to utilize the Govern-

ment launch, and will send her out to-night for that purpose. I made inquiries as to your whereabouts, in order to extend to you the privilege of going over to Unalaklik by this means, but find that you have already taken your departure.

This note is sent in order that you may understand the circumstances, and that I would have favored you as requested had you been here at this time.

Very respectfully,

G. S. BINGHAM,
Captain, Quartermaster, U. S. A., Chief Quartermaster.

[Telegram.]

FORT DAVIS, *August 18, 1901.*

SHELDON JACKSON, *Nome:*

Egbert sails this afternoon. Present this with request for transportation yourself, two assistants, and seven Lapps. Steamer goes to St. Michael, and will not probably return here.

J. T. VAN ORSDALE,
Major, Seventh Infantry.

[Telegram].

ST. MICHAEL, *September 7, 1901.*

Dr. SHELDON JACKSON, *Nome:*

Rosecrans sails in about twenty days. General Randall says accommodations all taken on *Seward* and *Rosecrans*.

WALKER.

I N D E X .

- Bals, N. P., employment of, 50.
- Bertholf, Lieut. E. P., expedition to Siberia, 20-22, 130-168; official papers relating to, 176-205; report on Point Barrow relief expedition, 19-20.
- Brevig, T. L., reports, 125-127.
- Cape Blossom, herd, 14.
- Cape Prince of Wales, herd, 14.
- Commissioner of Education, educative work at missions, 37-38; letter of transmittal to Secretary of Interior, 3.
- Congregational mission, herd, 14, 127-128.
- Congressional appropriations for reindeer, 17.
- Cooperation of Treasury, State, and War Departments, 25-26.
- Dogs, epidemic among, 10.
- Eaton station, annual reports, 39-48; herd, 43-44, 47; log book, 50-79; personnel, 9; removal of reindeer, 80-81; schools, 47; trip of J. H. Romig to Kuskokwim River, 81-86.
- Education, 12, 13-14, 37-38, 47, 88-90, 212-215.
- Eskimo herders, efficiency of, 49.
- Evangelistic work, St. Lawrence Island, 95-96.
- Expenditure of reindeer fund, 1900-1901, 17.
- Friends' mission, herd, 14.
- Gambell, Dr. Francis H., efficiency of Eskimo herders, 49; reindeer herders, 18-19; report, 39-47; tour of inspection, 14-15.
- Golovin Bay, herd, 12.
- Hitchcock, E. A. *See* Secretary of Interior.
- Harris, W. T. *See* Commissioner of Education.
- Inspection, tour of, Dr. Gambell, 14-15.
- Itinerary, Dr. Sheldon Jackson, 26-32.
- Jackson, Dr. Sheldon, annual report, 9-32; directed to visit schools and reindeer stations, 212-215; itinerary, 26-32.
- Lerrigo, P. H. J., report, 88-96; daily journal, 97-123.
- Lopp, William T., reindeer herders, 18; report, 127-128.
- Missions, education, 37-38.
- Moravian reindeer stations, annual reports, 79-80; herd, 10-11.
- New herds, proposed, 16.
- Nilima, A., employment of, 50.
- Noreen, Henry, report, 80-81.
- Norwegian Evangelical Lutheran mission, annual report, 123-126; herd, 13; school, 13-14; sickness, 13.
- Point Barrow relief expedition, report on, 19-20.
- Point Barrow station, herd, 14, 128-129.
- Point Hope, 14.

- Presbyterian mission, St. Lawrence Island, annual report, 88-96; evangelistic work, 95-96; herd, 12, 14, 128-129; medical work, 92-93; school, 12, 88-90; supplies, 94; vital statistics, 93.
- Protestant Episcopal mission, herd, 11.
- Reindeer, as pack animals, 155-157; becoming profitable, 22-23; brands, 25; breaking in, 9; buying in Siberia, 151-155; Congressional appropriations, 17; embarking, 158; en route to Alaska, 161-164; fund, 17; herd at Congregational mission, 14, 127-128, Eaton station, 43-44, 47, Friends' mission, 14, Moravian mission, 10-11, Norwegian Evangelical Lutheran mission, 13, 123-126, Point Hope, 14, Presbyterian mission, 12, 14, 90-91, 128-129, Protestant Episcopal mission, 11, Roman Catholic mission, 11, Swedish Evangelical mission, 12, Synrock, 12-13; increase of, from 1892 to 1901, 17; in Siberia, 168-175; preserves, 25; proposed new herds, 16; relieve soldiers, 23-24; removal of, to valley of Kuskokwim River, 80-81; table of herds loaned by the Government, 15-17; transportation, 23, 208-209.
- Reindeer herders, efficiency of, 18.
- Roman Catholic mission, herd, 11, 86.
- Romig, J. H., report, 79-80; trip of, 81-86.
- St. Lawrence Island, daily journal, 97-123; herd, 12; school, 12.
- St. Michael station, 86-87; military supplies, 210-211.
- Schlunin, Dr. N. W., reindeer in Siberia, 168-175.
- Schools, Eaton station, 9, 47; Presbyterian mission, 12, 88-90; Teller station, 13-14; Government, 37-38.
- Secretary of Interior, letter of transmittal to, 3; letter to Senate, 3.
- Senate, action of, 2; letter of transmittal to, 3.
- Siberia, expedition to, 130-168; official papers relating to, 176-205; reindeer in, 168.
- Sprigg, S. R., report, 128-129.
- State Department, cooperation of, 25-26.
- Swedish Evangelical union mission, herd, 12.
- Synrock herd, 12, 46.
- Teller station, 126-127; herd, 13; school, 13-14; sickness, 13.
- Treasury Department, cooperation of, 25-26.
- Tuberculosis, St. Lawrence Island, 92.
- United States soldiers, official papers relating to relief of, 206-208.
- War Department, cooperation of, 25-26.
- Willard, F. E., log book, 50-79; report of, 47.

